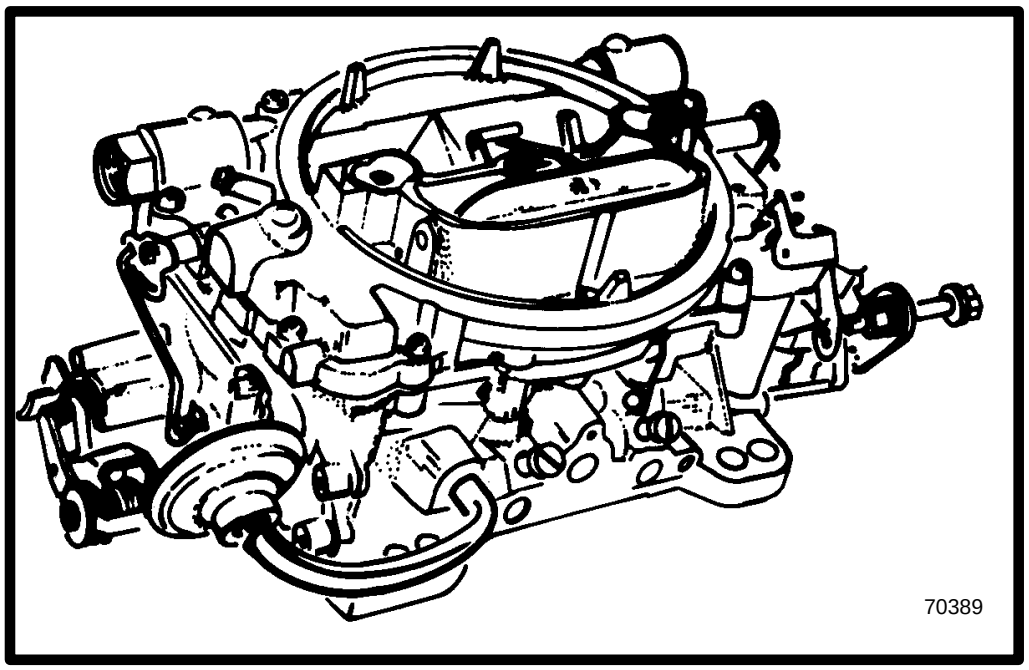
FUEL SYSTEMS



5

C

WEBER 4 BARREL CARBURETOR

Index

Table of Contents

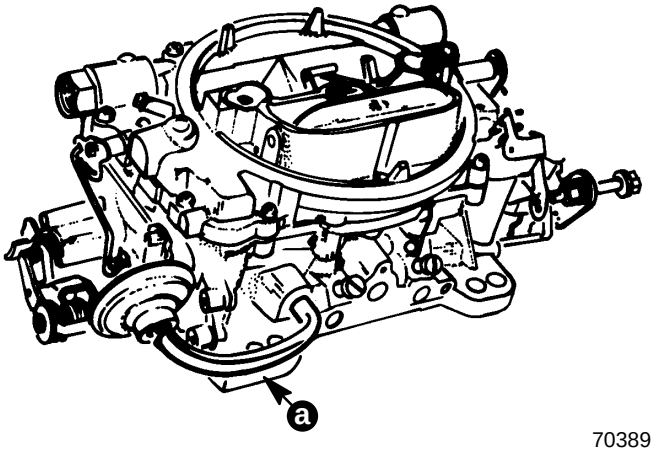
	Page
Identification	5C-1
Replacement Parts Warning	5C-1
Torque Specifications	5C-1
Tools	5C-1
Specifications	5C-2
Jet Changes for Altitude	5C-2
Carburetor Adjustment Specifications	5C-3
Description	5C-4
Precautions	5C-4
Important Service Information	5C-5
Weber Carburetor Adjustable Accelerator Pump	5C-5
Hard Starting	5C-5
Carburetor Metering Rod And Jet Identification	5C-6
Maintenance	5C-7
Flame Arrestor	5C-7
Fuel Filter	5C-8
Adjustments	5C-9
Accelerator Pump	5C-9
Choke Pull-Off	5C-10
Float Drop	5C-10
Float Level	5C-11
Idle Speed and Mixture Adjustments	5C-12
Thunderbolt IV Equipped Engines	5C-12
Thunderbolt V Equipped Engines	5C-14
Repair	5C-15
Removal	5C-15
Installation	5C-16
Exploded View	5C-18
Disassembly	5C-19
Cleaning and Inspection	5C-28
Reassembly	5C-29

NOTICE

For information and procedures on trouble-shooting, refer to Section 1C.

Index

Identification



70389

a - Weber Identification Number Location

Replacement Parts Warning

⚠WARNING

Electrical, ignition and fuel system components on your MerCruiser are designed and manufactured to comply with U.S. Coast Guard Rules and Regulations to minimize risks of fire and explosion.

Use of replacement electrical, ignition or fuel system components, which do not comply with these rules and regulations, could result in a fire or explosion hazard and should be avoided.

Torque Specifications

Fastener Location	in. lb.	lb. ft.	N·m
Carburetor To Manifold	132		15
Fuel Line To Carburetor		18	24

Tools

Description	Part Number
Universal Carburetor Gauge	91-36392
Tachometer	91-59339
Universal Carburetor Stand	Obtain Locally
Torx® Screwdriver (15,20,25)	

TORX SCREWDRIVERS

Weber carburetors will have a “star” shaped socket in the head of some screws. A TORX® screwdriver must be used on this type of screw. The sizes used are numbers 15, 20 and 25.

Index

Specifications

Engine Model	Carb Type	Mercury Number (Manufacturer Number)	Primary Jet Size	Secondary Jet Size	Metering Rod Number	Metering Rod Spring Color
4.3LX Alpha	WFB	3304-9565A6 (9600)	.089	.089 in.[1]	16-6857	Yellow
4.3LXH Alpha and Bravo Gen+	WFB	3310-807826 (9666)	.092	.089 in.	16-686457	Green

NOTE: *Some early production engines had stock secondary jet size of .095 in. Refer to "Important Service Information" for more information*

Jet Changes for Altitude

Engine Model	Mercury Number (Manfacturer Number)		Elevation		
			0 - 5000 Feet	5000 - 9000 Feet	9000 - Above
4.3LXH	3310-807826 (9666)	Primary Jet	.092 In		
		Metering Rod	Stock	686864	

UNIT OF MEASUREMENT In. (mm) ALL MEASUREMENTS ARE ± 1/64 In. (0.4 mm).

Carburetor Adjustment Specifications

Engine Model	4.3LX / 4.3LXH Gen +
Carburetor Manufacturer Number	9600, 9666
Float Level	1-9/32 in. (33 mm)
Float Drop	2 in. (51 mm)
Pump Rod Hole Location	Third Hole From End
Accelerator Pump	7/16 in. (11 mm) [1]
Choke Pull-Off	15/64 in. (6 mm)
Choke Coil Rod	Top Of Rod Even With Bottom Of Lever Hole [2]
Preliminary Mixture Idle Screw Setting	1-1/4 Turns

[1] Measured from top of carburetor to bottom of S-link

[2] Remove choke rod from lever hole. Choke held closed and choke rod pushed down with top edge of rod even with bottom edge of hole.

Description

Weber WFB carburetor is unique in design, as the main body and flange are cast as a one piece unit. This, along with the bowl cover, make up the two piece construction which is made of light, durable aluminum to dissipate heat.

There are two separate float circuits. Each float circuit supplies fuel to a primary low speed circuit and a primary and secondary high speed circuit. The bowls are vented to the inside of the air horn. A connecting vent passage effects a balance of the air pressure between the two bowls.

The float needle valves are installed at an angle to provide the best possible seating action on the needles. This provides better needle response to float movement, also.

The high speed circuits use staged step-up rods in the main metering jets to control the amount of fuel admitted to the nozzles. The position of the step-up rod is controlled by manifold vacuum applied to the vacuum piston.

A primary air bleed located in the venturi cluster prevents a rich condition or bog as the high speed circuit is reactivated after deceleration.

Small “L” shaped metal tabs, called “distribution tab(s),” are attached to some venturi clusters and protrude into the air stream at the proper location to aid distribution of fuel on selected applications.

Precautions

⚠ WARNING

Always disconnect battery cables from battery BEFORE working on fuel system to prevent fire or explosion.

⚠ WARNING

Be careful when cleaning flame arrestor and crankcase ventilation hose: gasoline is extremely flammable and highly explosive under certain conditions. Be sure that ignition key is OFF. DO NOT smoke or allow sources of spark or open flame in area when cleaning flame arrestor and crankcase ventilation hose.

⚠ WARNING

Be careful when changing fuel system components: gasoline is extremely flammable and highly explosive under certain conditions. Be sure that ignition key is OFF. DO NOT smoke or allow sources of spark or open flame in area while changing fuel filter. Wipe up any spilled fuel immediately.

Fuel Supply Connections

⚠ WARNING

Avoid gasoline fire or explosion. Improper installation of brass fittings or plugs into fuel pump or fuel filter base can crack casting and/or cause a fuel leak.

- **Apply #592 Loctite Pipe Sealant with Teflon to threads of brass fitting or plug. DO NOT USE TEFLON TAPE.**
- **Thread brass fitting or plug into fuel pump or fuel filter base until finger tight.**
- **Tighten fitting or plug an additional 1-3/4 to 2-1/4 turns using a wrench. DO NOT OVER-TIGHTEN.**
- **Install fuel line. To prevent over-tightening, hold brass fitting with suitable wrench and tighten fuel line connectors securely.**
- **Check for fuel leaks.**

⚠ WARNING

Make sure no fuel leaks exist, before closing engine hatch.

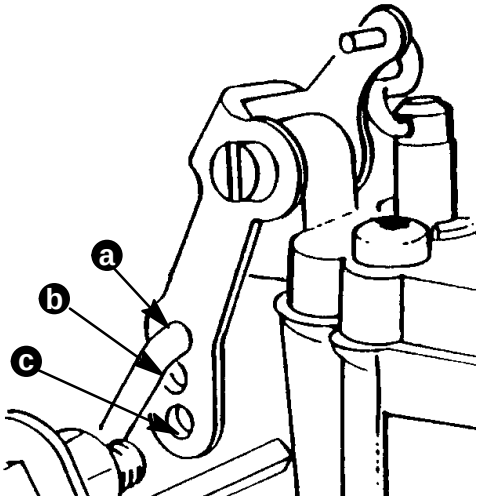
⚠ CAUTION

DO NOT operate engine without cooling water being supplied to water pickup holes in gear housing or water pickup inlet, or water pump impeller will be damaged and subsequent overheating damage to engine may result.

Important Service Information

Weber Carburetor Adjustable Accelerator Pump

The accelerator pump lever on Weber Carburetors has three holes in it. The closest hole to the lever's pivot point is the richest, the second hole is leaner and the hole furthest away is the leanest. All production carbs have the pump rod installed in the closest (richest) hole. If you are having a "rich" bog on acceleration, move the rod to the second or third hole. Weber put the three holes in the lever so the amount of fuel delivered by the accelerator pump could be changed.



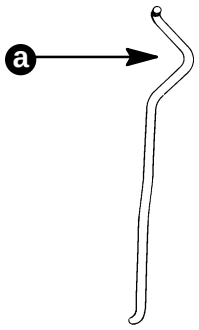
70472

a - Rich
b - Lean
c - Leaner

Hard Starting

If a hard starting condition exists, after engine has not been operated for a period of time, proceed with the following:

1. Before starting engine, remove flame arrestor then operate throttle to see if choke closes.
2. If choke is stuck open, check choke stove link rod and choke linkage on both sides of carburetor for cause of sticking. Possible paint or interference to rod or linkage.
3. If choke plate does not close tight step 2 or 3, then choke link rod will have to be bent to make it shorter so it will close choke plate completely.



73716

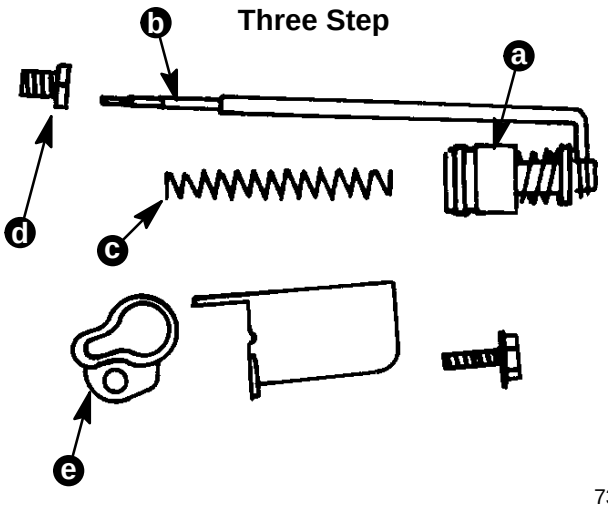
a - Bend Here To Shorten

4. After installing, ensure that the rod does not rub against stove cover or carburetor throughout its travel.

Carburetor Metering Rod And Jet Identification

METERING ASSEMBLY

The metering rod assemblies are different in the following ways:



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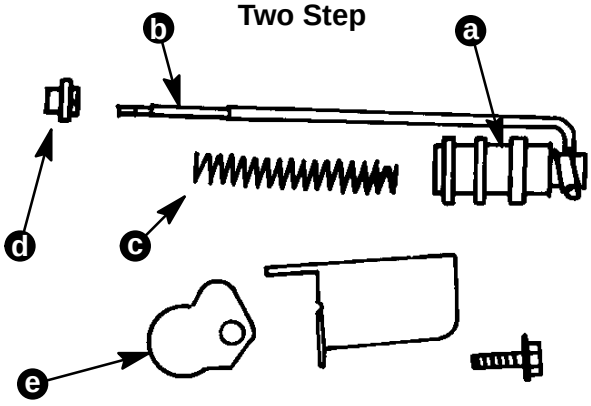
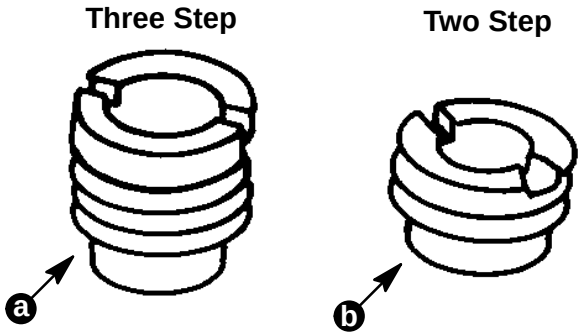


73729

a - Piston
b - Metering Rod
c - Spring
d - Jet
e - Piston Cover

METERING JETS

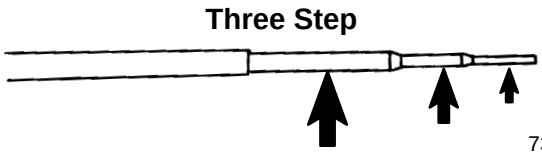
The metering jets in this carburetor are taller than the jets in a standard carburetor.



73728

a - Three Step Metering Rod
b - Two Step Metering Rod

METERING ROD HAS “THREE STEPS” -VS- TWO



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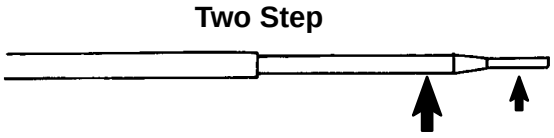
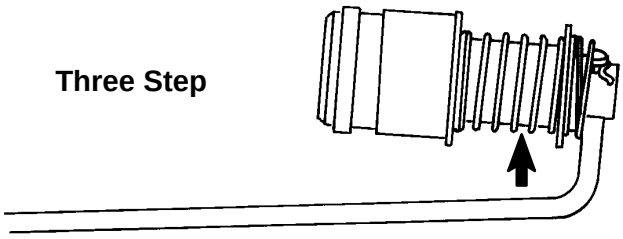


73724

PISTON SHAPE IS DIFFERENT AND HAS A SECOND SPRING



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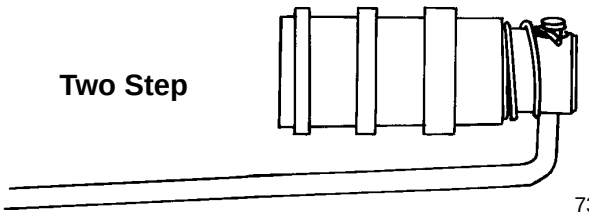
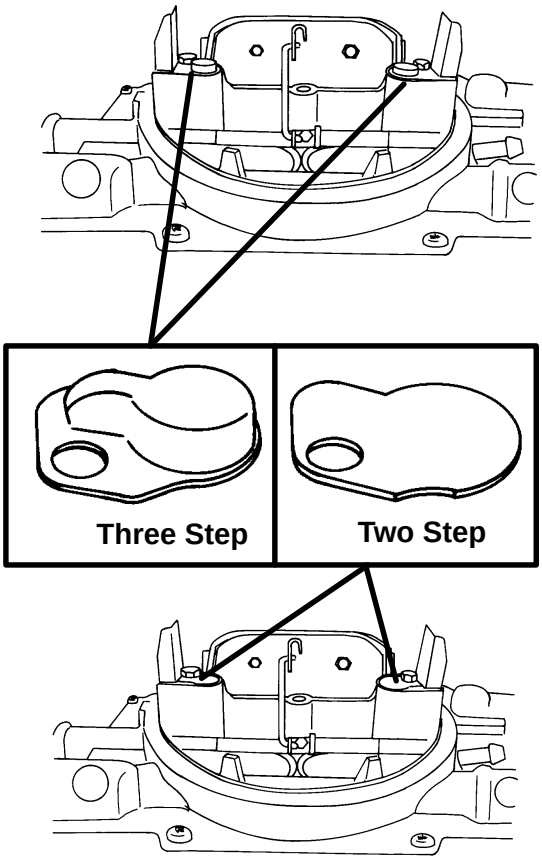


73727

Index

PISTON ASSEMBLY COVER IS HIGHER

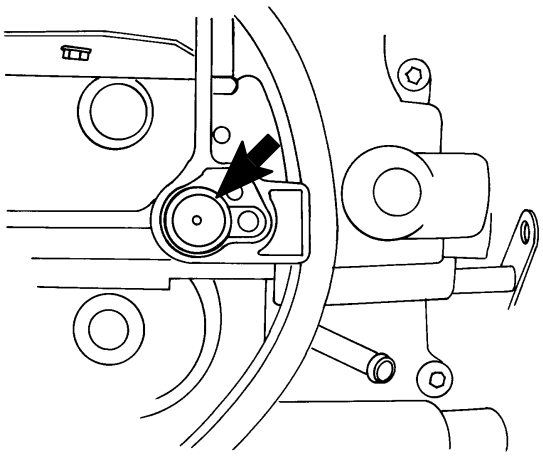


73735

73725

73736

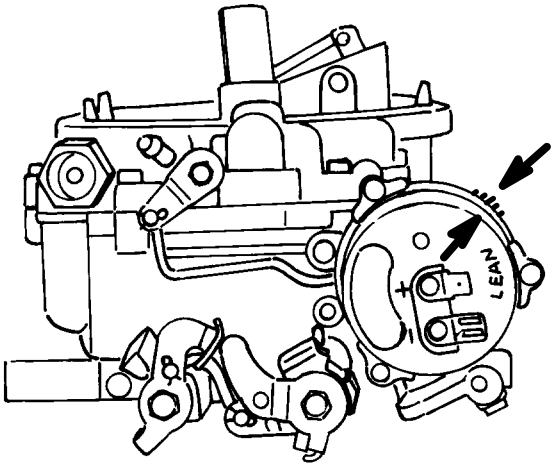
PISTON BORE HAS A STEP ON THREE STEP MODEL



73737

ELECTRIC CHOKE

The electric choke should be set with marks aligned.



74104

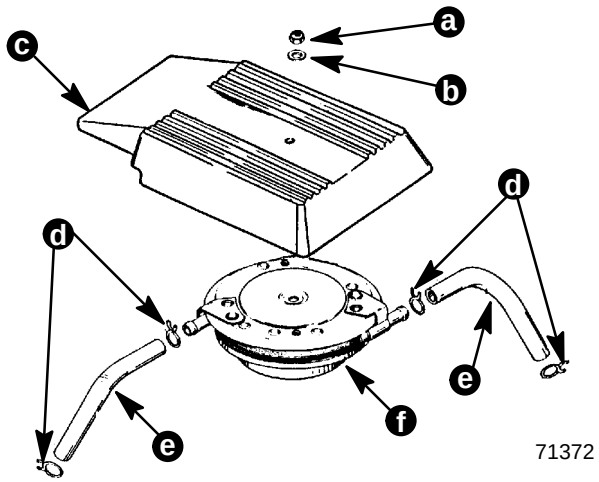
Maintenance

Flame Arrestor

NOTICE
Refer to "Precautions," in this section, BEFORE proceeding.

5. Remove (in the following order):
   a. Nut
   b. Sealing washer
   c. Carburetor cover
   d. Crankcase ventilation hoses from flame arrestor and rocker arm covers
   e. Flame arrestor
6. Clean and inspect:
   a. Clean flame arrestor in solvent and blow dry with compressed air.
   b. Clean crankcase ventilation hoses.
   c. Inspect crankcase ventilation hoses for cracks or deterioration, and replace if necessary.

7. Install (in the following order):
   a. Flame arrestor
   b. Crankcase ventilation hoses to flame arrestor and rocker arm covers
   c. Carburetor cover
   d. Sealing washer
   e. Nut (tighten securely)



71372

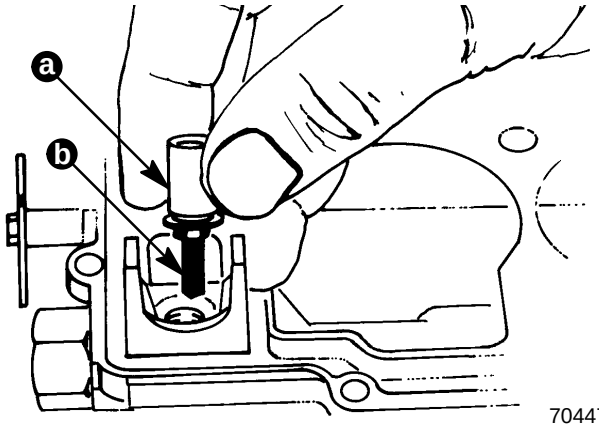
Flame Arrestor with Carburetor Cover (Typical)

a - Nut
b - Sealing Washer
c - Carburetor Cover
d - Sta-Strap
e - Crankcase Cover
f - Crankcase Ventilation Hose
g - Flame Arrestor

Fuel Filter

NOTICE
Refer to "Precautions," in this section, BEFORE proceeding.

Carburetor inlet fuel filter is installed in bottom side of fuel inlet seat (in the carburetor top). Refer to "Disassembly" and "Reassembly" to service.



70447

a - Fuel Inlet Seat (with Gasket)
b - Fuel Inlet Filter

Index

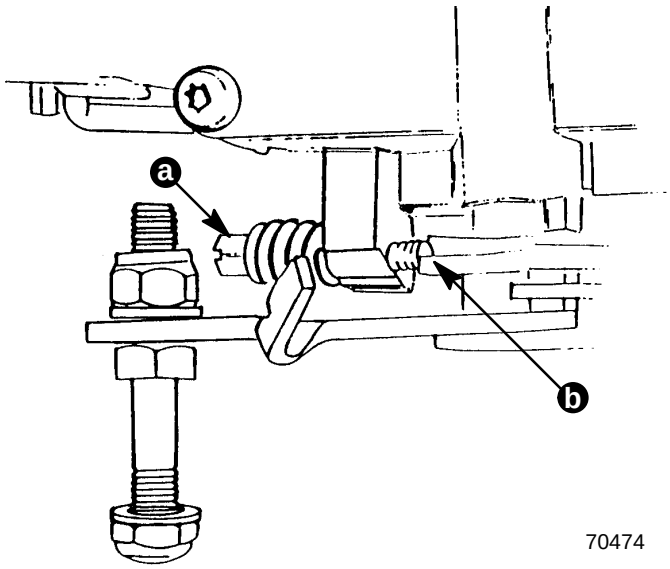
Adjustments

NOTICE
Refer to "Precautions," in this section, BEFORE proceeding.

Accelerator Pump

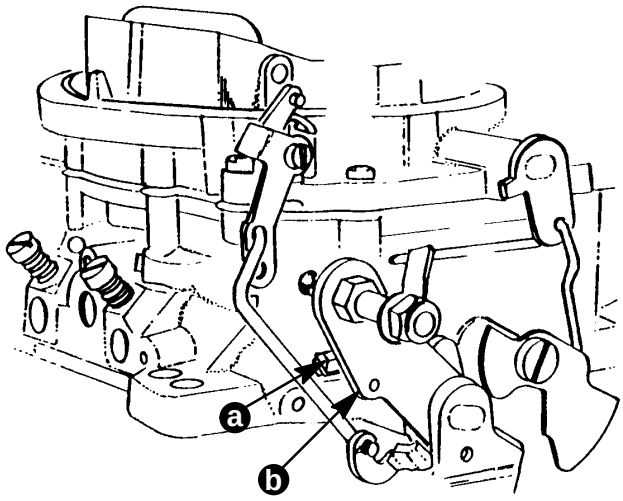
IMPORTANT: Refer to "Important Service Information" in this section, regarding the three accelerator pump linkage holes and placement of linkage rod.

1. Back out idle speed screw until it no longer contacts throttle lever.



70474

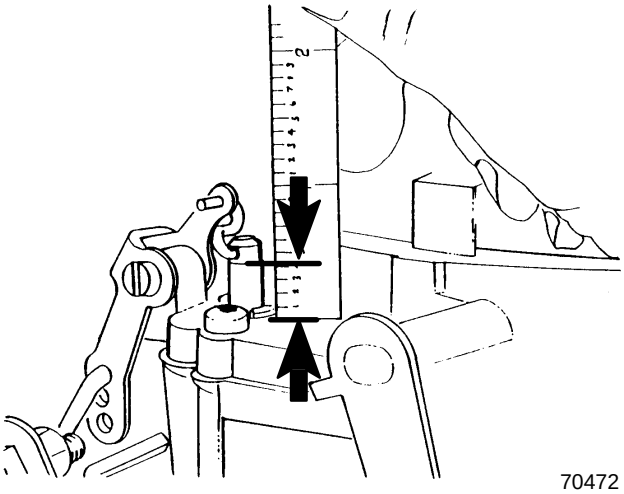
a - Idle Speed Screw
b - Throttle Lever Contact Point



70473

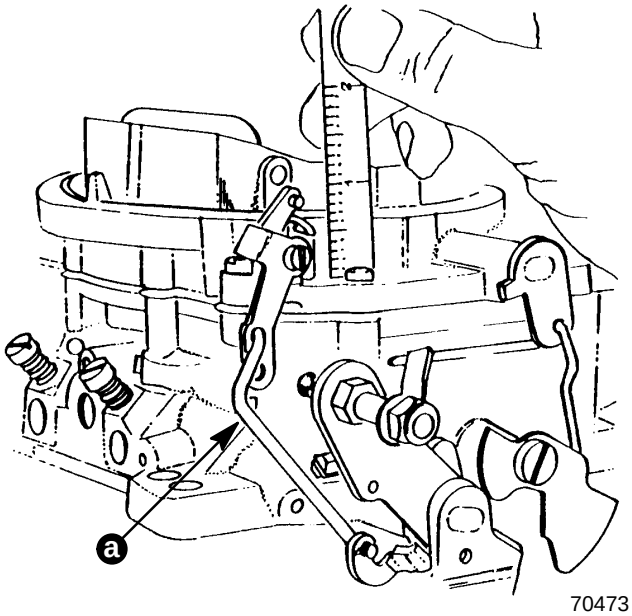
a - Idle Speed Screw
b - Throttle Lever

2. Close throttle valves completely.
3. Accelerator pump is set at 7/16 in. (11 mm), which is measured from the carburetor top to the bottom of the S-link as shown.



70472

4. Adjustment of accelerator pump is done by bending the linkage as necessary to achieve the proper dimension as stated above.



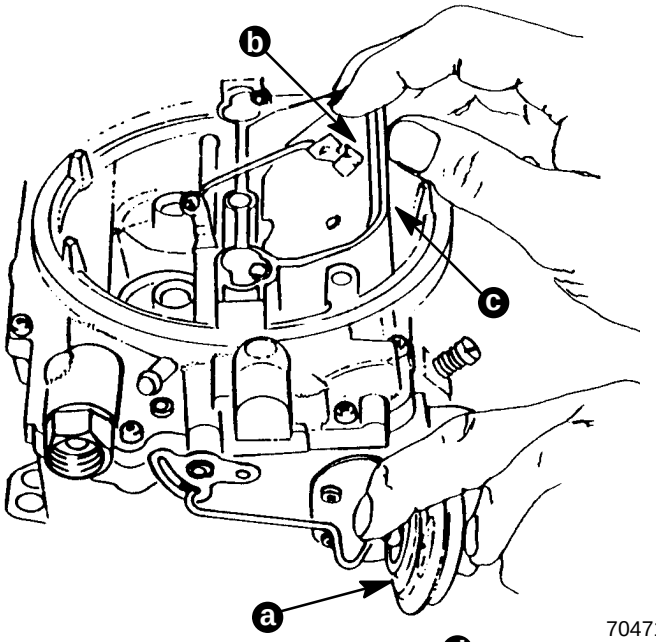
70473

a - Bend Here

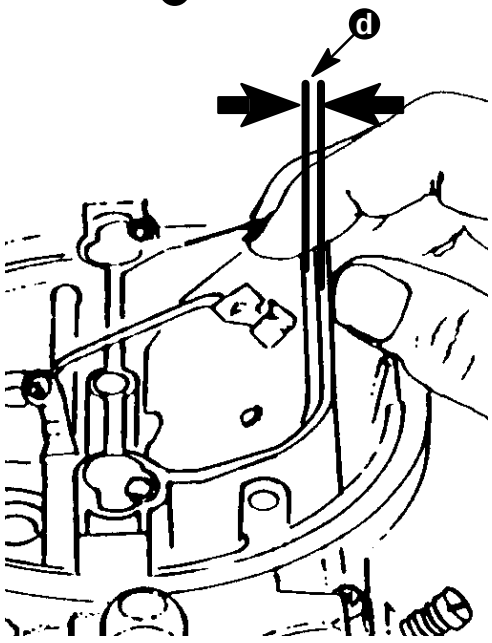
Index

Choke Pull-Off

1. Choke pull-off is checked by holding in on vacuum diaphragm and attempting to close choke plate. The gap between the plate and housing is to be set at15/64 in. (6 mm).



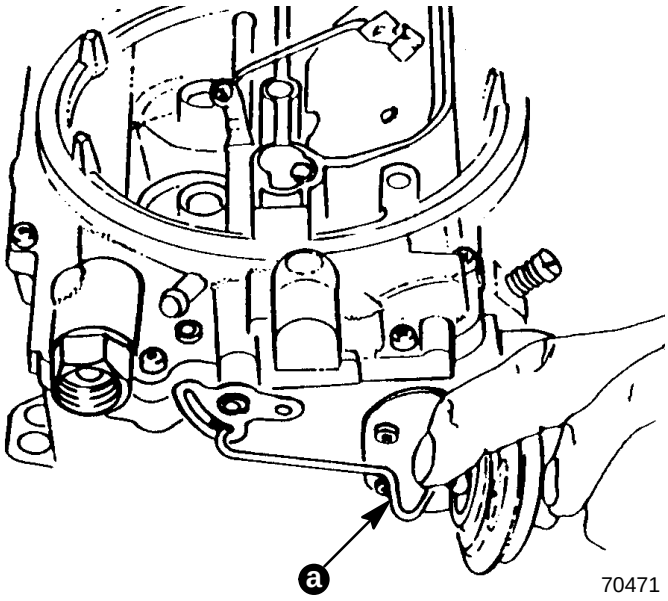
70471



70471

a - Vacuum Diaphragm
b - Choke Plate
c - Housing
d - Gap Measurement

2. Bend choke pull-off linkage to achieve setting given in Step 1.

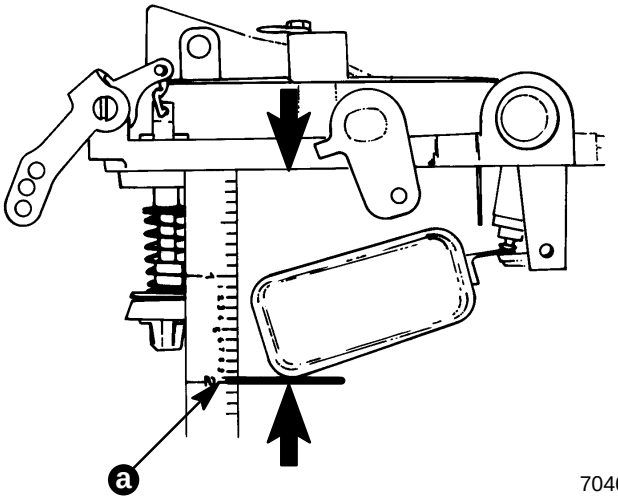


70471

a - linkage (Bend)

Float Drop

1. Measure float drop from bottom side of carburetor top to toe of float (lowest part), as shown. It must be set at 2 in. (51 mm).

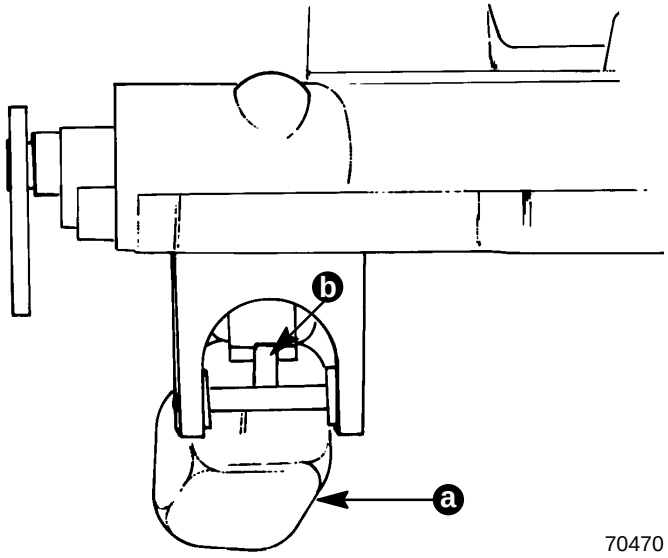


70469

a - Drop Measurement

2. If float drop is not correct, hold hinge pin firmly and bend tab shown, as needed.

IMPORTANT: Do not put pressure on fuel needle valve and seat while bending tab, or damage may result.

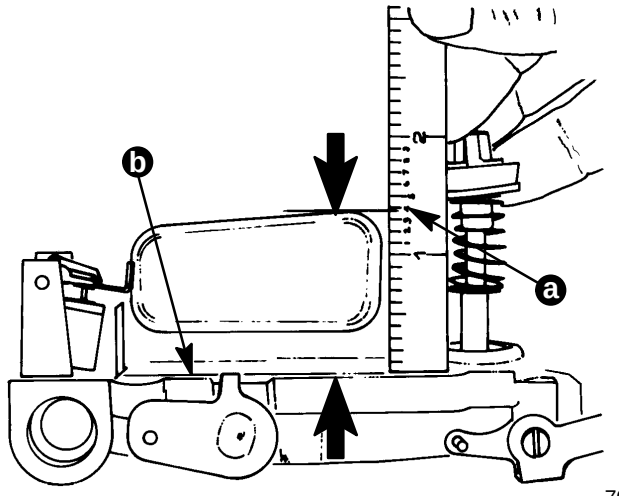


70470

a - Float
b - Tab (Bend)

Float Level

1. Measure float level from bottom side of carburetor top (with gasket in place) to toe of float as shown. It must be set at 1-9/32 in. (33 mm).

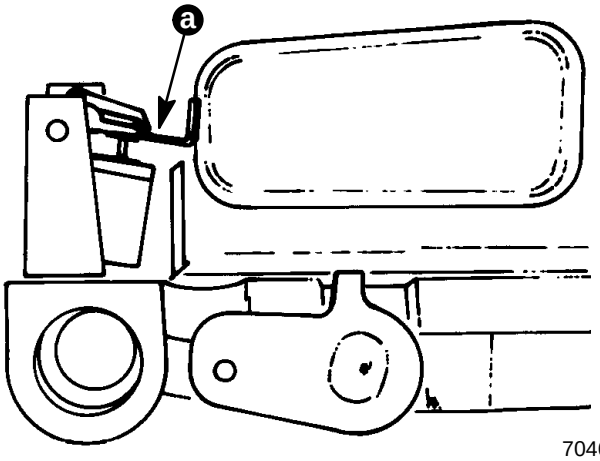


70468

a - Float Level Measurement
b - Gasket

2. If float level requires adjustment, hold hinge pin firmly and bend float arm shown, as needed.

IMPORTANT: Do not put pressure on fuel needle valve and seat while bending tab, or damage may result.



70468

a - Float Level Tab (Bend)

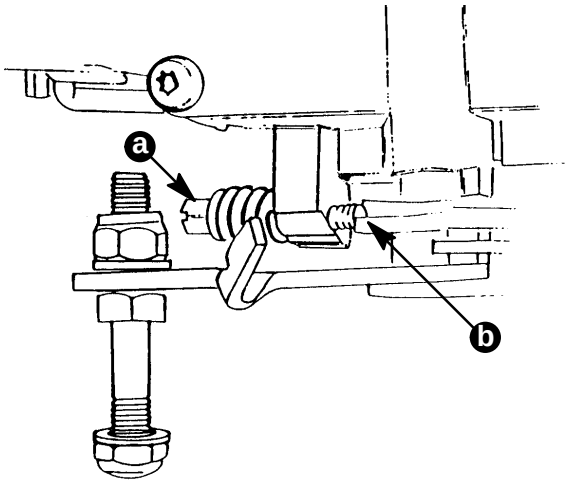
Idle Speed and Mixture Adjustments

Thunderbolt IV Equipped Engines

PRELIMINARY IDLE SPEED AND MIXTURE

Initial start settings are given following. Make final adjustment with engine running (refer to “Final Idle Speed and Mixture”).

1. Turn idle speed screw until it contacts throttle lever.

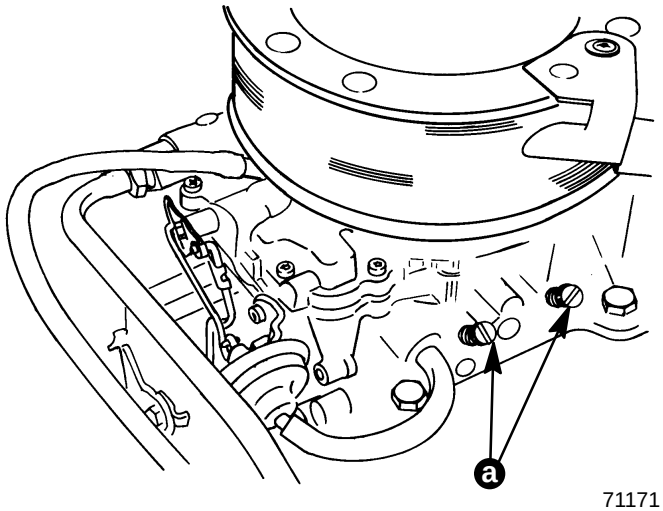


70474

a - Idle Speed Screw
b - Throttle Lever Contact Point

2. Turn idle mixture screws (needles) in (clockwise) until LIGHTLY seated, then back out 1-1/4 turns.

IMPORTANT: Do not turn idle mixture screws tightly against seat, as damage to seat and/or needle may result.



71171

a - Idle Mixture Screws (Needles)

FINAL IDLE SPEED AND MIXTURE

IMPORTANT: Boat MUST BE in the water and engine at normal operating temperature to accurately check and adjust idle speed and mixture.

Carburetor should be set so that engine idles as smoothly as possible, with boat in the water, engine normal operating temperature and drive unit in forward gear. To adjust idle speed and mixture, proceed as follows:

IMPORTANT: DO NOT attempt to compensate for other engine problems (incorrect ignition timing, faulty ignition components, low compression, vacuum leaks, etc.) with carburetor adjustments. This will only cover the problem, which must be corrected if engine is to achieve maximum fuel economy and performance.

1. Connect a shop tachometer to engine.

IMPORTANT: DO NOT turn idle mixture screws (needles) tightly into seat, as damage to needle and/or seat may result.

2. If a new or rebuilt carburetor has been installed, turn each idle mixture screw until it LIGHTLY contacts seat (if not already accomplished), then back out 1-1/4 turns. This will provide a sufficient setting to allow starting the engine.
3. Start engine and run at 1500 RPM until engine reaches normal operating temperature.

⚠WARNING

DO NOT leave helm unattended while performing idle speed and mixture adjustments, following. BE CAREFUL NOT TO ACCIDENTALLY ACCELERATE ENGINE WHILE PERFORMING ADJUSTMENTS.

4. With boat in open water, place remote control in forward gear, idle position.
5. Disconnect throttle cable barrel from anchor stud. BE SURE NOT TO LOSE SPACER ON ANCHOR STUD.
6. Adjust idle speed adjustment screw to obtain specified idle RPM. (Refer to Section 1B - “Tune-Up Specifications” charts.)

NOTE:Idle speed must be at specified RPM or less. Or engine will be operating on the off idle circuit. Mixture screw adjustments will be ineffective if this condition exists.

7. With engine running at or just below specified idle RPM, adjust idle mixture screws as follows:
   a. Turn idle mixture needle in (clockwise) until the engine speed begins to decrease due to LEAN mixture.
   b. Turn same idle mixture screw outward (counterclockwise) until the engine speed begins to decrease due to a RICH mixture.
   c. Turn screw in to a point between these two extremes to obtain maximum engine smoothness and RPM.
   d. Repeat procedure with other mixture screw.
   e. Readjust idle speed adjusting screw, if necessary, to obtain specified idle RPM.
8. Place remote control in neutral. Turn ignition OFF.
9. Accelerator pump linkage should be rechecked at this time. Refer to Steps 3 and 4, of Adjustments –“Accelerator Pump”, as previously outlined and verify pump is set at 7/16 in. (11mm) as specified.
10. Refer to SECTION 2. Install and adjust throttle cable following instructions appropriate to your power package.

Thunderbolt V Equipped Engines

ADJUSTING IDLE MIXTURE

The procedure for adjusting carburetor idle mixture can be found in the appropriate engine service manual. This procedure also requires that the ignition module be locked in the “Base Timing Mode”.

IMPORTANT: In order to properly set idle mixture, the ignition module MUST BE locked in the “Base Timing Mode”. This is necessary because of the “Idle Speed Control” feature that exists in the ignition module. See information on the previous pages about this feature.

1. Using a jumper wire, connect the ignition system timing lead “13” (PUR/WHT wire) to a good engine ground (–). This locks the ignition module into the “Base Timing Mode”.
2. Adjust idle mixture following the procedure in the appropriate engine service manual.
3. Remove the jumper wire from the timing terminal.

ADJUSTING ENGINE IDLE SPEED

This procedure should be done with boat in the water, drive unit in neutral and engine at normal operating temperature. Refer to the Operation and Maintenance Manual for the correct idle speed.

1. Disconnect the throttle cable from carburetor.

IMPORTANT: In order to properly set idle speed, the ignition module MUST BE locked in the “Base Timing Mode”. This is necessary because of the “Idle Speed Control” feature that exists in the ignition module. See information on the previous pages about this feature.

2. Connect a shop tachometer to engine.
3. Using a jumper wire, connect the ignition system timing lead “13” (PUR/WHT wire) to a good engine ground (–). This locks the ignition module into the “Base Timing Mode”.
4. Start engine and allow it to reach normal operating temperature. Place the remote control lever in forward gear, idle position.
5. Adjust idle speed to recommended RPM.
6. Stop engine. Readjust cable barrel and reinstall the throttle.

IMPORTANT: Be sure to disconnect the jumper wire from the ignition system test terminal before attempting to resume normal operations. If the jumper wire is left in place, the ignition module will operate in the “Base Timing Mode”. This means that the additional timing advance features would not be functioning.

7. Remove the jumper wire from the timing terminal.

Repair

NOTICE
Refer to “Precautions,” in this section, BEFORE proceeding.

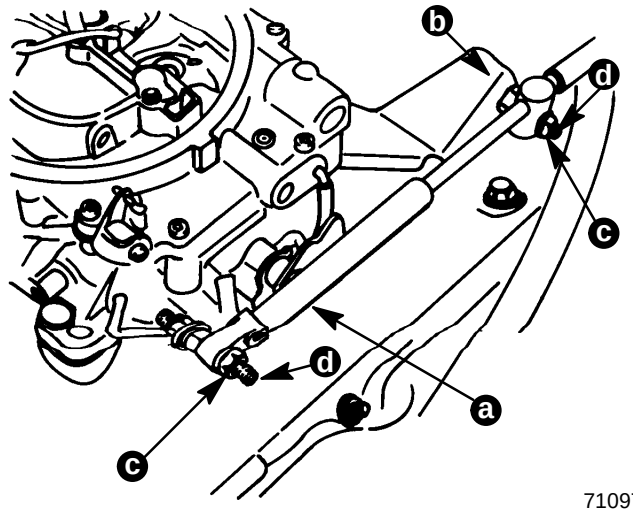
Removal

IMPORTANT: Carburetor malfunctions are, in many cases, caused by the presence of dirt, water or other foreign matter in carburetor. To aid in diagnosis, carefully remove carburetor from engine without draining fuel from bowl. Contents of fuel bowl may, then, be inspected for contamination as carburetor is disassembled.

1. Turn off fuel supply at fuel tank.
2. Remove carburetor cover. Remove crankcase ventilation hoses from flame arrestor, then remove flame arrestor.

IMPORTANT: Place a clean cloth in bores of carburetor to prevent dirt and foreign material from falling into bores.

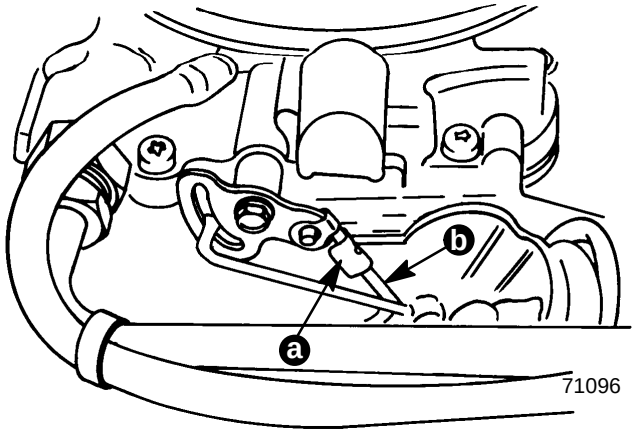
3. Disconnect throttle cable attaching hardware from throttle bracket and throttle lever anchor studs. Remove throttle cable.



71097

a - Throttle Cable
b - Bracket
c - Attaching Hardware
d - Anchor Studs

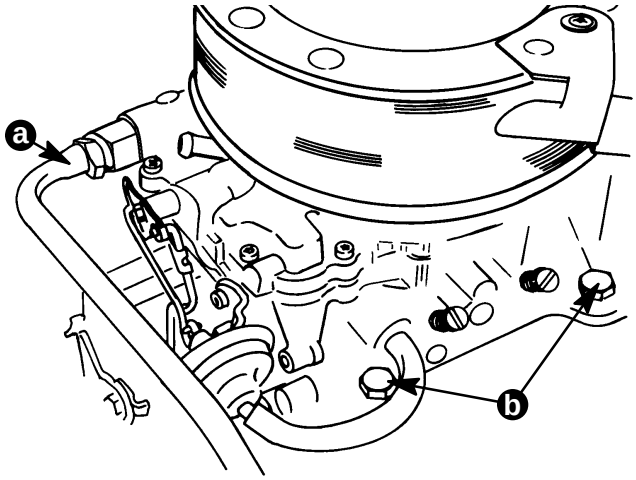
4. Disconnect retaining clip and choke linkage rod.



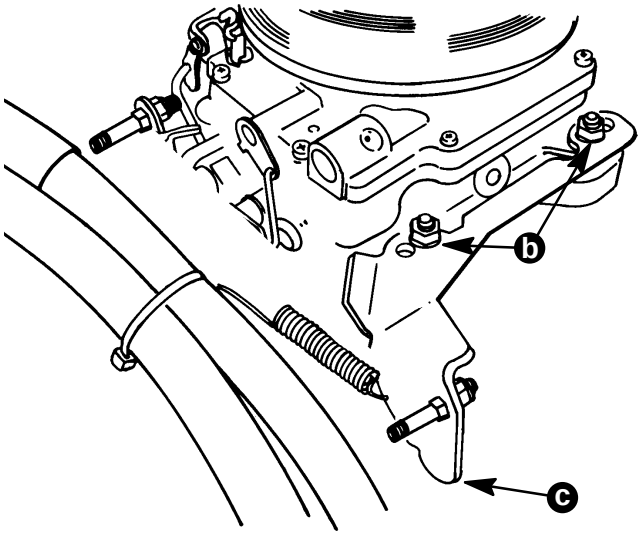
71096

a - Retaining Clip
b - Linkage Rod

5. Remove fuel line and carburetor attaching hardware. Remove carburetor and throttle bracket. Discard old gasket from carburetor.



71173



71172

a - Fuel Line
b - Attaching Hardware
c - Throttle Bracket

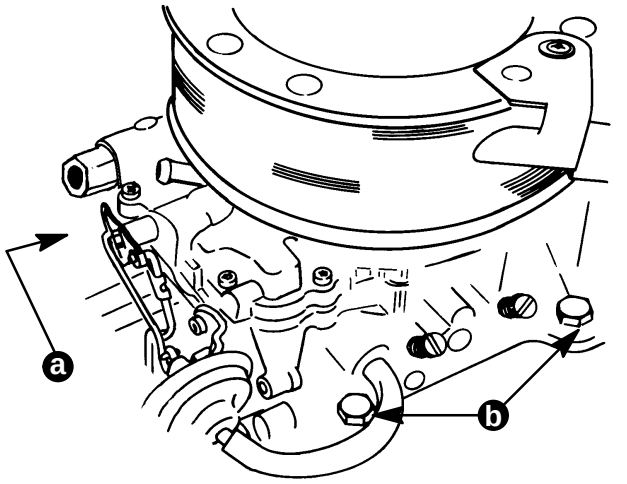
Index

6. Remove adaptor/wedge plate (if so equipped) from manifold and discard old gasket.
7. Place a clean cloth over intake manifold openings.

IMPORTANT: Covering intake manifold prevents entry of dirt or foreign material through openings.

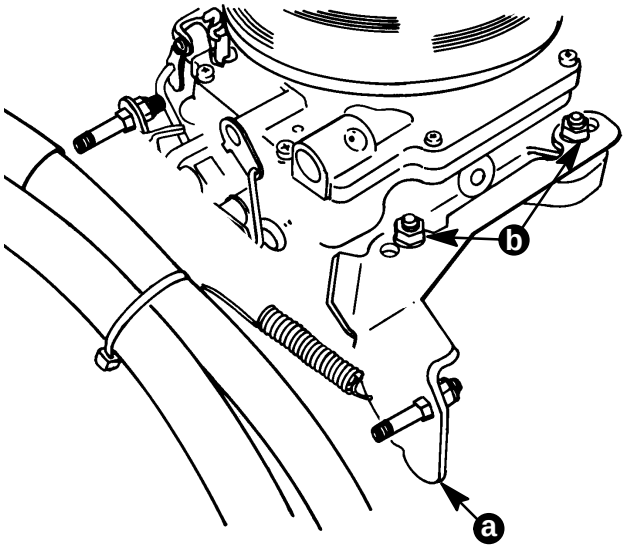
Installation

1. Place appropriate new gasket on intake manifold.
2. If so equipped, install adaptor or wedge plate, depending on model. Place appropriate new gasket on top.
3. Install carburetor and throttle bracket with attaching hardware. Torque fasteners to 132 lb. in. (15 N·m).



71173

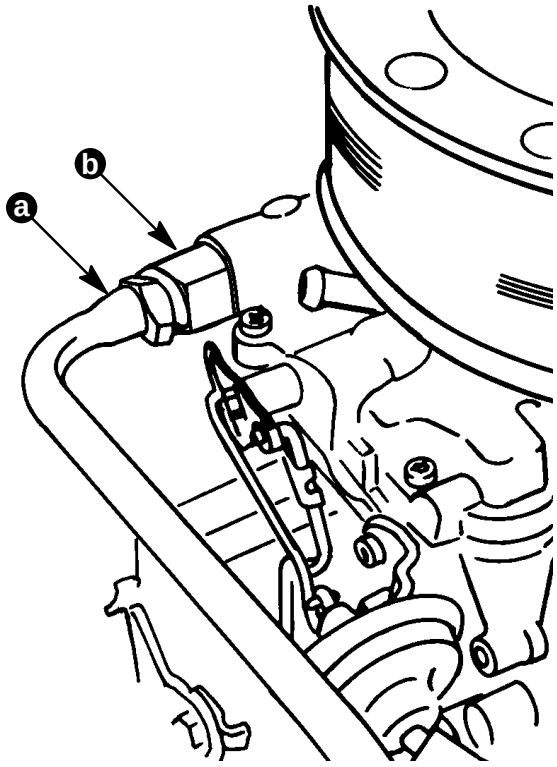
a - Throttle Bracket (Not Visible In This View)
b - Attaching Hardware



71172

a - Throttle Bracket
b - Attaching Hardware

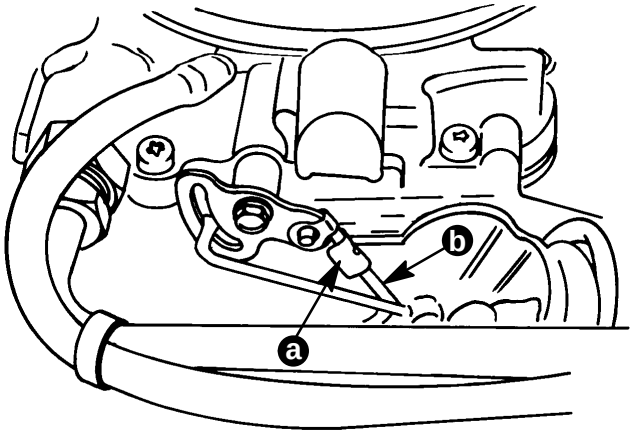
4. Install fuel line. To prevent over-tightening, hold fuel inlet filter nut with suitable wrench and tighten fuel line connector securely.



71173

a - Fuel Line
b - Fuel Inlet Filter Nut

5. Connect choke linkage rod and install retaining clip.



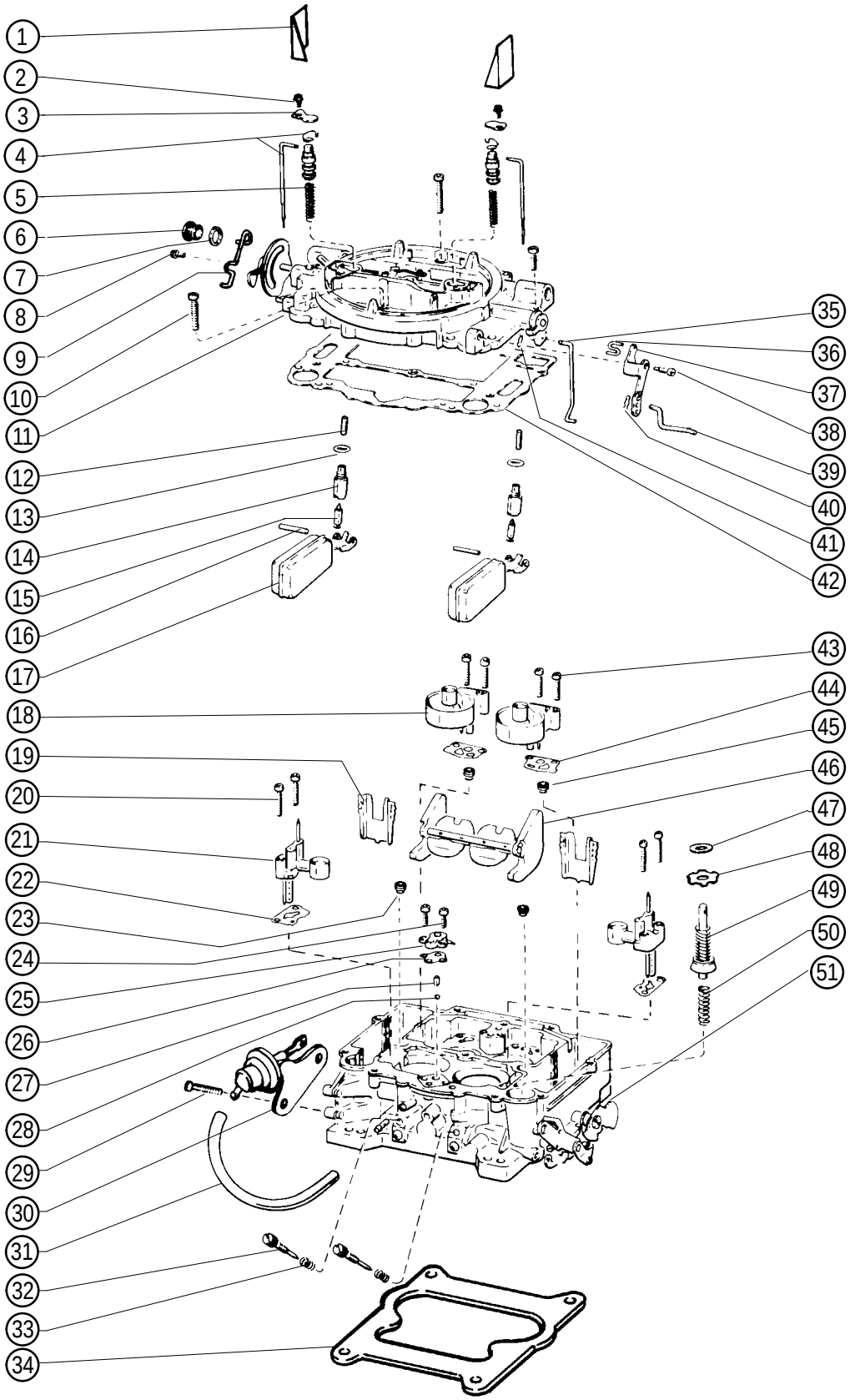
71096

a - Clip
b - Linkage Rod

6. Refer to Section 2. **Install and adjust** throttle cable following instructions appropriate to your power package.
7. Install flame arrestor and tighten nut securely.
8. Reconnect battery cables to battery by first installing positive battery cable to positive (+) battery terminal. Tighten clamp securely. Then, install negative battery cable to negative (–) battery terminal. Tighten clamp securely.
9. Turn on fuel supply at fuel tank.
10. Start engine and check for gasoline leaks. If leaks exist, **STOP ENGINE IMMEDIATELY** and recheck connections.
11. Adjust idle speed and idle mixture, as previously outlined under “Adjustments.”

Exploded View

Weber Carburetor



Index

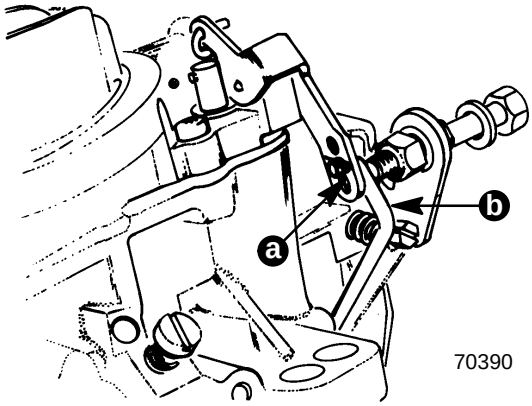
1-Air Deflector (2)
2-Screw (2)
3-Cover, Metering Rod (2)
4-Metering Rod Assembly (2)
5-Spring, Metering Rod (2)
6-Fuel Inlet Fitting
7-Sealing Washer
8-Screw
9-Linkage Rod, Choke Pull-Off
10- Screw
11- Air Horn (Carburetor Top)
12- Filter, Fuel Inlet (2)
13- Gasket (2)
14- Seat, Fuel Inlet (2)
15- Needle Valve, Fuel Inlet (2)
16- Pin (2)
17- Float (2)
18- Secondary Venturi Cluster (2)
19- Baffle Plate, Float Bowl (2)
20- Screw (4)
21- Primary Venturi Cluster (2)
22- Gasket (2)
23- Jet, Primary Fuel (2)
24- Screw (2)
25- Fuel Pump Injector Housing
26- Gasket
27- Check-Weight (or Check-Spring, if So Equipped)
28- Check-Ball
29- Screw
30- Diaphragm, Choke Pull-Off
31- Vacuum Hose
32- Idle Mixture Screw (2)
33- Spring, Idle Mixture Screw (2)
34- Gasket, Carburetor Base
35- Linkage Rod, Choke Plate
36- S-Link
37- Accelerator Pump Lever
38- Screw
39- Linkage Rod, Accelerator Pump
40- Wire Clip
41- Wire Clip
42- Gasket
43- Screw (4)
44- Gasket (2)
45- Jet, Secondary Fuel (2)
46- Secondary Air Valve and Weight Assembly
47- Plunger Washer
48- Plunger Guide
49- Accelerator Pump
50- Spring, Accelerator Pump
51- Float Bowl/Body (Carburetor Bottom)

Disassembly

The following is a step-by-step procedure for completely overhauling carburetor after removal from engine. In many cases, however, complete overhaul is not necessary and, in these cases, only the steps required to repair the carburetor malfunction should be performed. Read the instructions carefully to prevent doing unnecessary steps.

IMPORTANT: Before performing any service on carburetor, it is essential that carburetor be placed in a holding fixture to prevent possible damage to throttle valves.

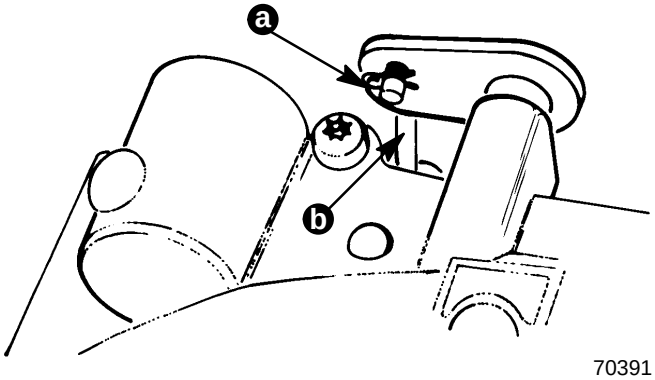
1. Remove wire clip to disconnect accelerator pump linkage.



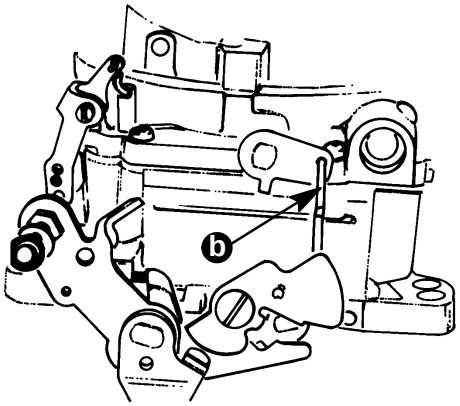
a - Wire Clip
b - Accelerator Pump Linkage Rod

Index

2. Remove wire clip to disconnect choke plate linkage.



70391

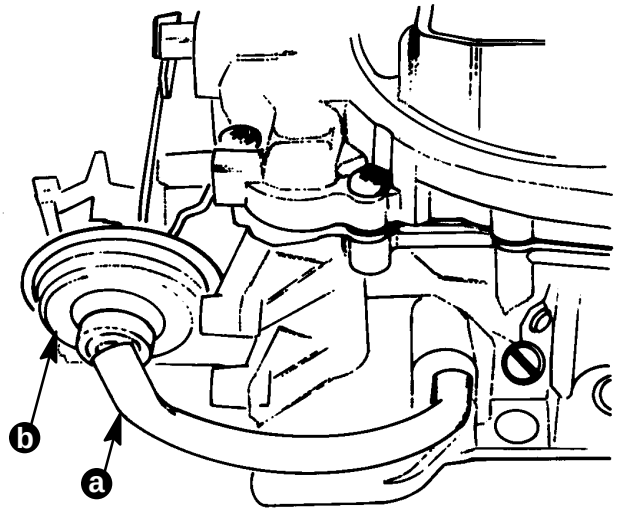


70392

a - Wire Clip
b - Choke Plate Linkage Rod

NOTE: Do not remove vacuum hose if not servicing diaphragm.

3. Disconnect vacuum hose from choke pull-off diaphragm.

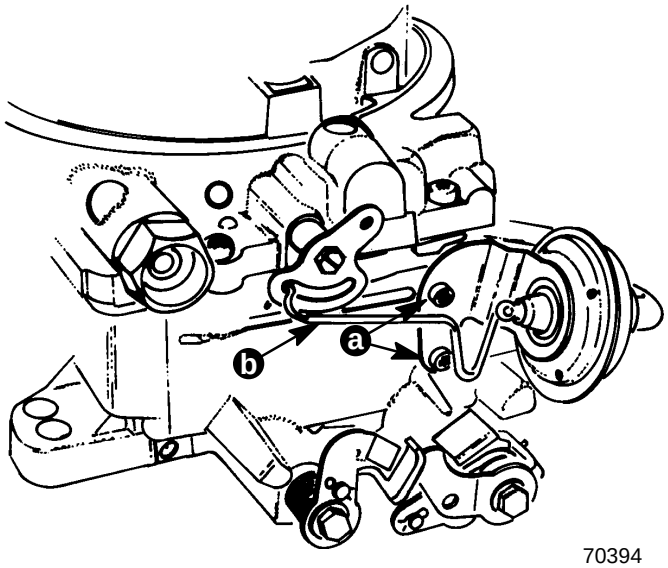


70393

a - Vacuum Hose
b - Choke Pull-Off Diaphragm

4. Remove screws from choke pull-off diaphragm bracket to disengage choke pull-off linkage.

NOTE:Depending on amount of service required, it may not be necessary to remove diaphragm and bracket.



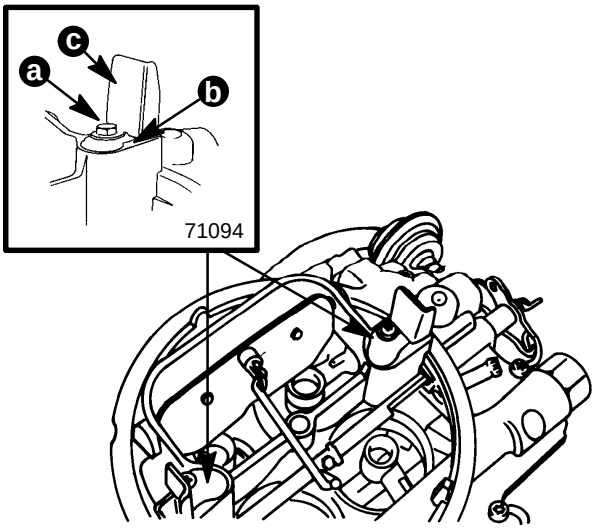
70394

a - Screws
b - Linkage Rod

IMPORTANT: Metering rods should always be removed before separating top and bottom halves of carburetor.

Index

5. Loosen (not necessary to remove, depending on amount of service required) metering rod cover screws. Turn cover, or remove, to expose metering rod.

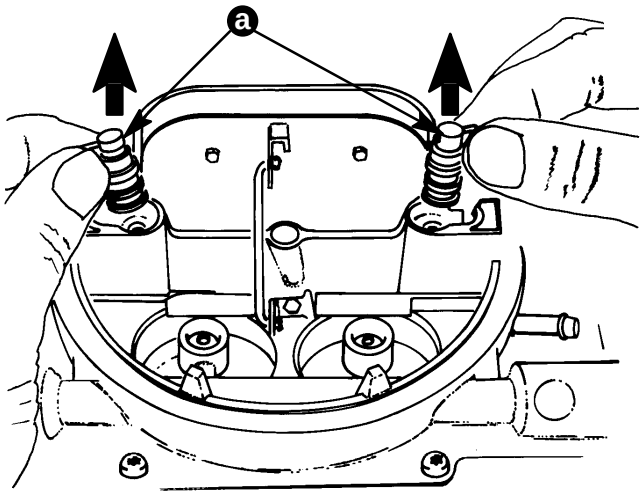


71095

a - Screws
b - Metering Rod Cover(s)
c - Air Deflectors If Equipped)

IMPORTANT: Be careful not to mix metering rods when removing them.

6. Carefully lift metering rod assemblies straight out.

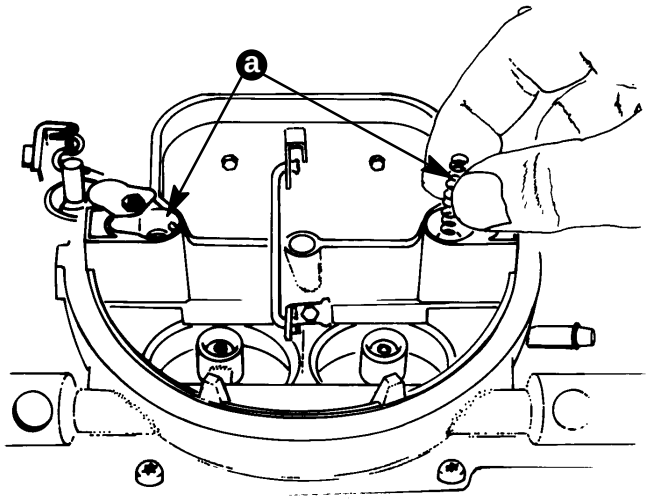


70396

a - Metering Rod Assembly(s)

7. Remove metering rod springs.

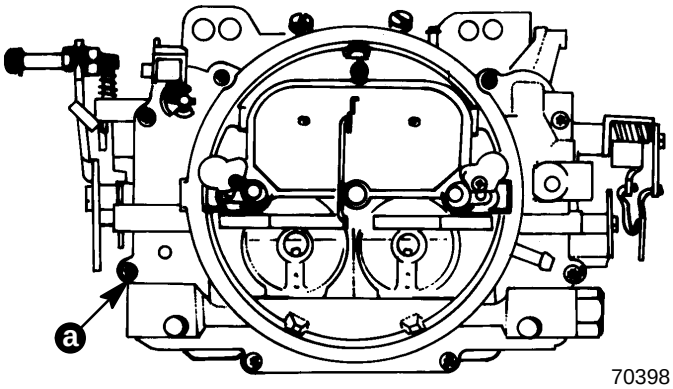
IMPORTANT: Metering rod springs are color coded and should not be interchanged with other carburetors.



70397

a - Spring(s)

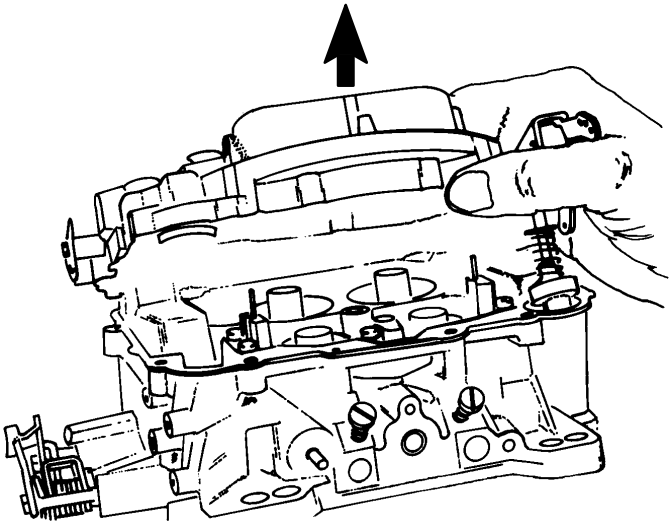
8. Remove nine screws to separate top and bottom halves of carburetor.



70398

a - Screw(s)

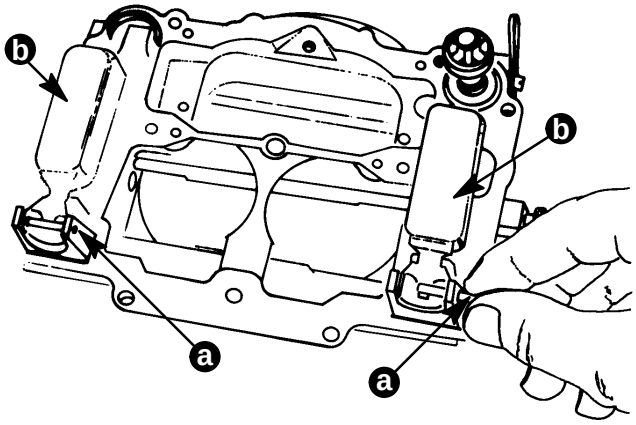
9. Carefully lift off carburetor top and disconnect choke linkage.



70399

10. Slide pin out to remove the float.

IMPORTANT: Be careful not to mix up floats after removal.

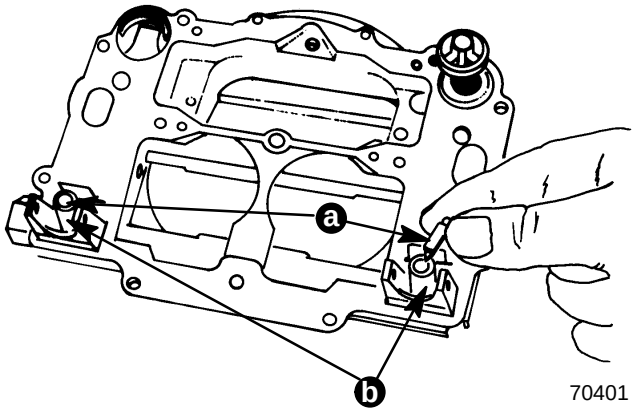


70400

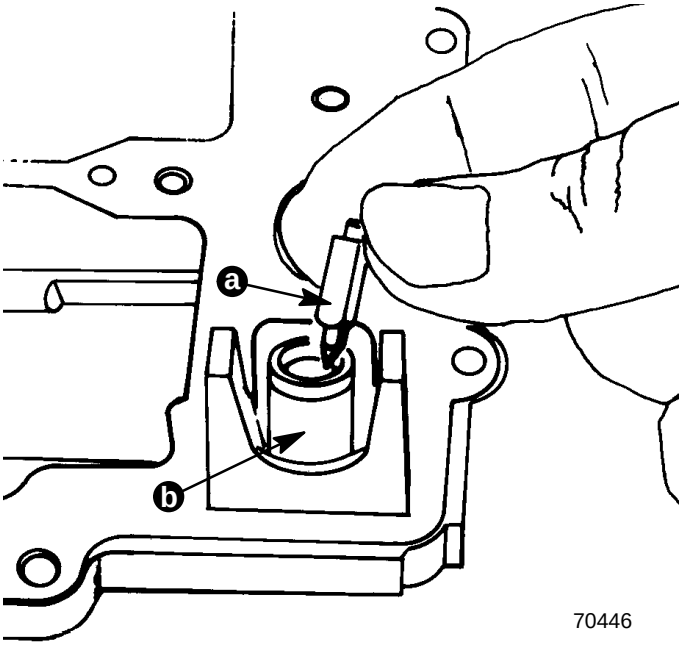
a - Pin(s)
b - Float(s)

11. Remove inlet needle from seat.

IMPORTANT: Be careful not to mix up inlet needles and seats after removal.



70401

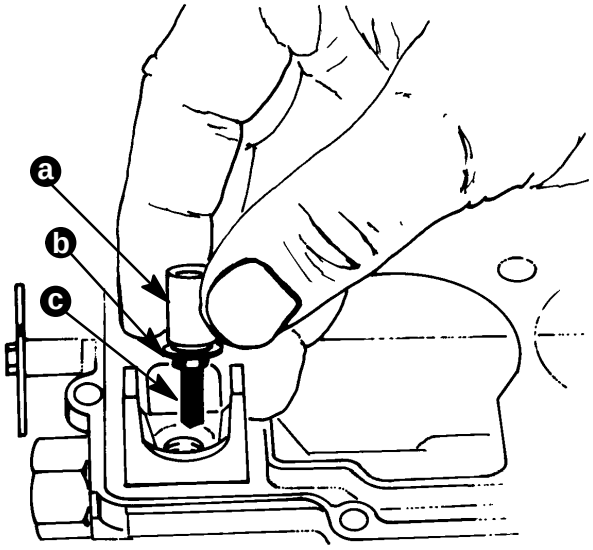


70446

a - Inlets Needle(s)
b - Seat(s)

12. Remove seat, gasket, and inlet filter.

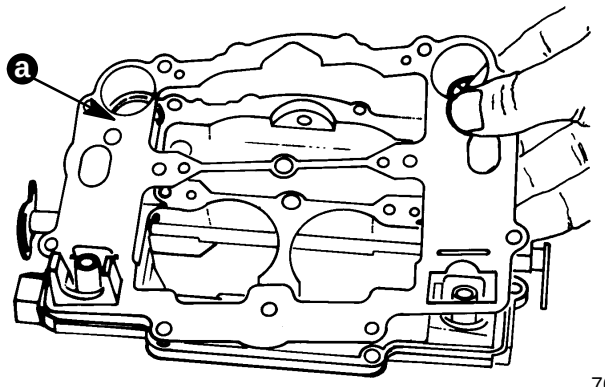
IMPORTANT: Be careful not to mix up seats after removal.



70447

a - Seat
b - Gasket
c - Inlet Filter

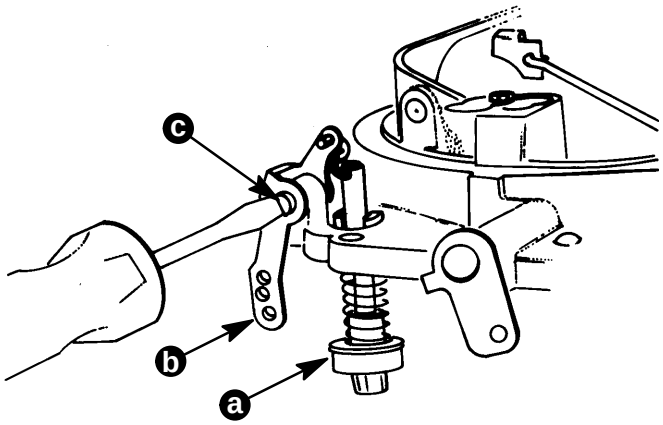
13. Remove gasket from top of carburetor.



70448

a - Gasket

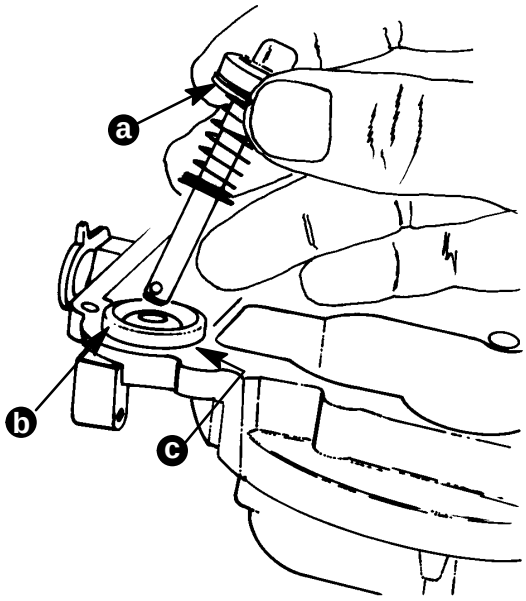
14. Remove accelerator pump lever.



70449

a - Accelerator Pump
b - Accelerator Pump Lever
c - Retaining Screw

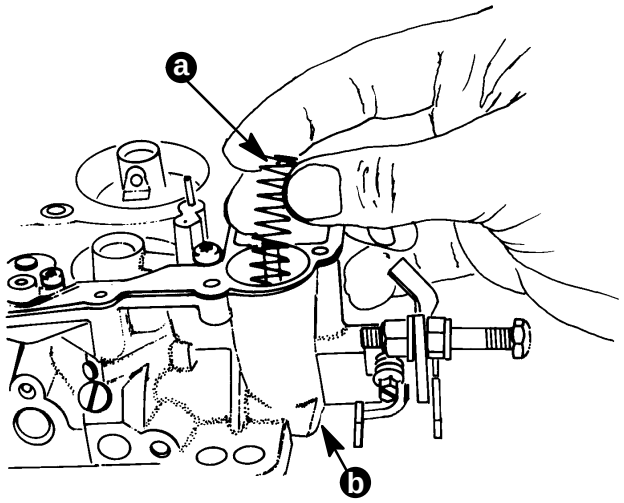
15. Remove accelerator pump.



70450

a - Accelerator Pump
b - Plunger Guide
c - Plunger Washer (Not Visible In This View)

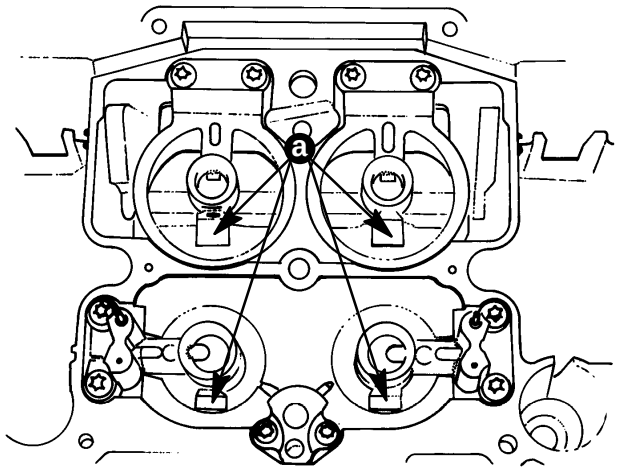
16. Remove accelerator pump spring from bottom half of carburetor.



70451

a - Accelerator Pump Spring
b - Carburetor Bottom

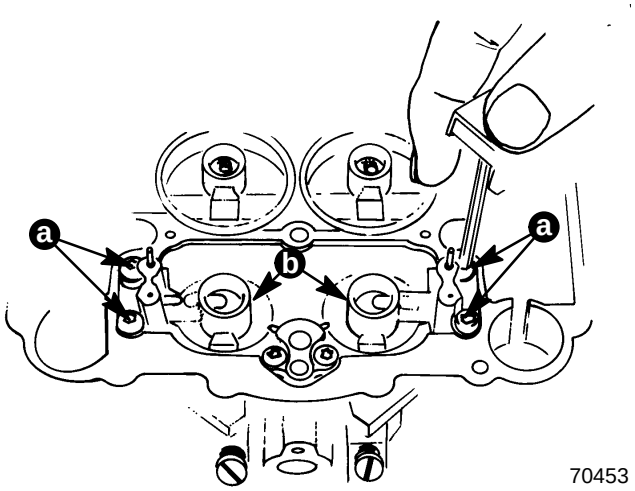
IMPORTANT: Before removing venturi clusters, it is important to note which clusters are equipped with a "distribution tab." This distribution tab arrangement varies from one carburetor to another.



70452

a - Distribution Tab(s) Location And Total Number May Vary

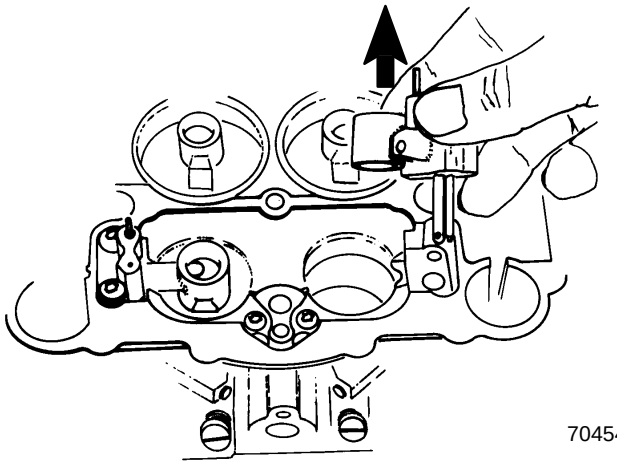
17. Remove two screws that secure primary venturi cluster.



70453

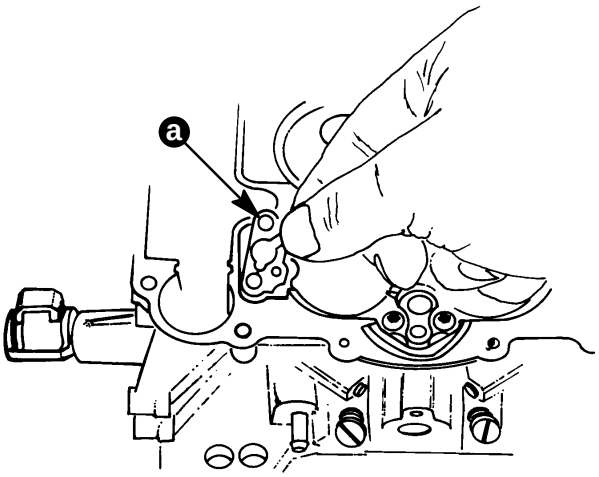
a - Screw(s) Two On Each Side
b - Primary Venturi Cluster(s)

18. Remove primary venturi cluster by lifting straight up.



70454

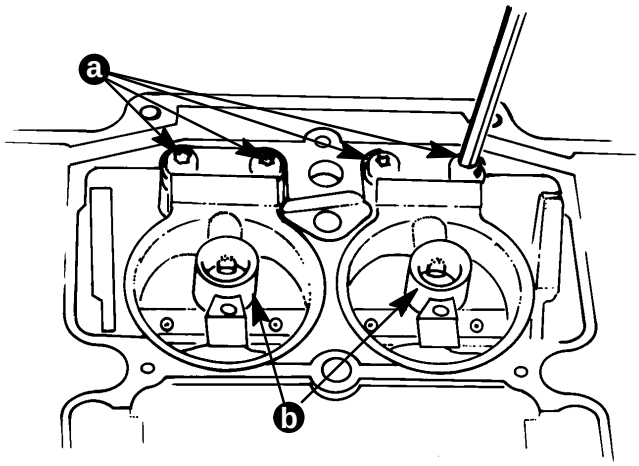
19. Remove gasket from beneath venturi cluster.



70455

a - Gasket Primary Venturi Cluster

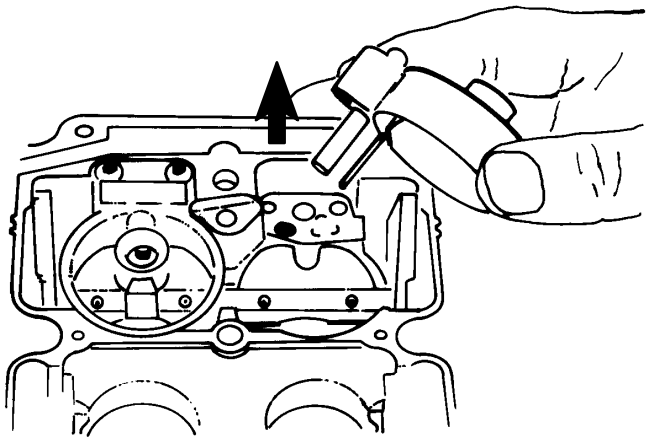
20. Remove two screws that secure secondary venturi clusters.



70456

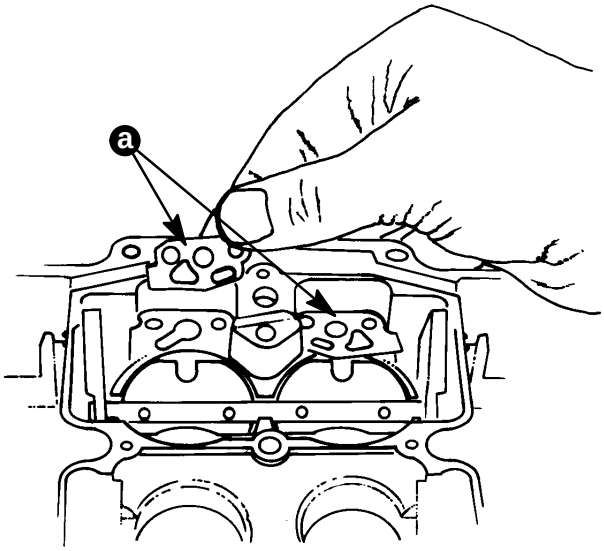
a - Screw(s) Two Each Side
b - Secondary Venturi Cluster(s)

21. Remove secondary venturi cluster by lifting it straight up.



70457

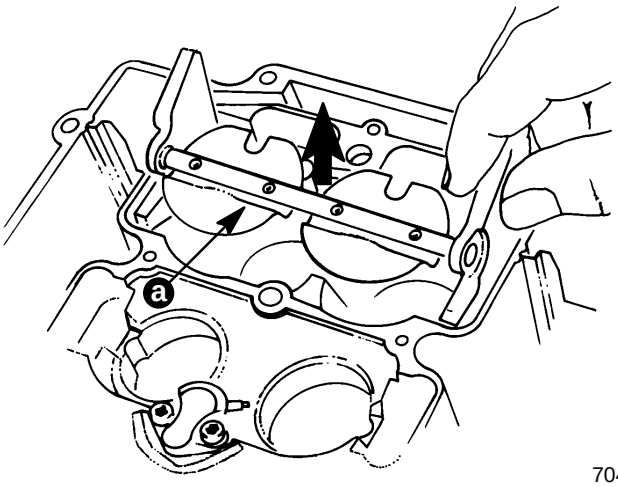
22. Remove gaskets from beneath secondary venturi clusters.



70458

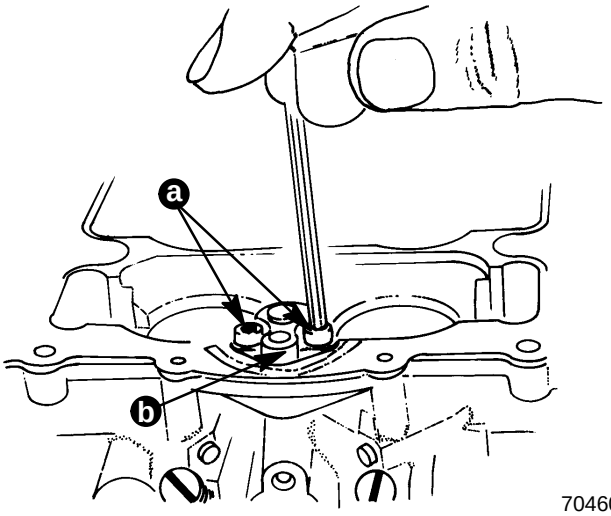
a - Gasket, Secondary Venturi Cluster

23. Remove secondary air valve and weight assembly by lifting it straight out.



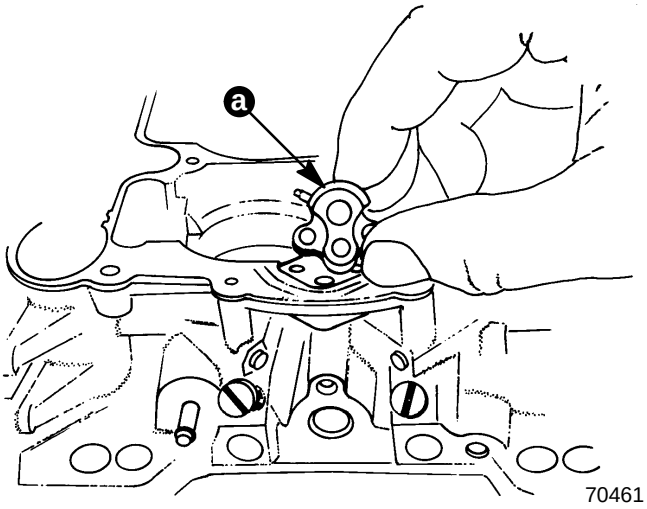
a - Secondary Air Valve And Weight Assembly

24. Remove two screws that secure pump jet housing.



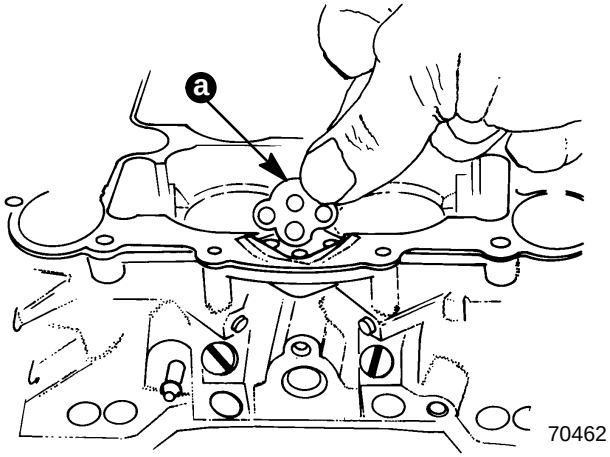
a - Screw(s)
b - Pump Jet Housing

25. Remove pump jet housing.



a - Pump Jet Housing

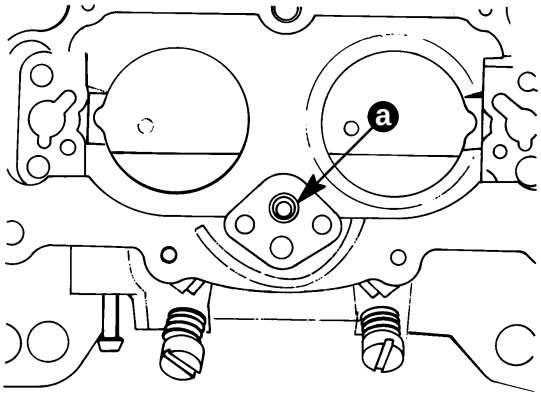
26. Remove gasket from beneath pump jet housing.



a - Gasket, Pump Jet Housing

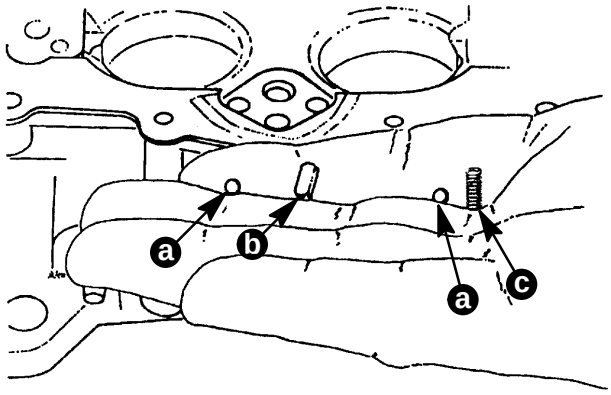
27. Remove check-ball and check-weight, or check-ball and check-spring, from hole beneath pump jet housing.

IMPORTANT: If your carburetor had a ball and weight combination, replace with ball and weight. If your carburetor used a ball and spring combination, replace with ball and spring.



70463

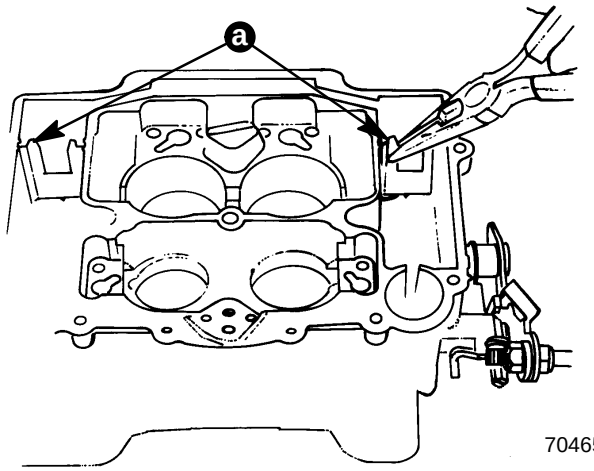
a - Ball Location



70464

a - Check Ball
b - Check Weight
c - Check Spring

28. Remove float bowl baffle plates, if necessary.



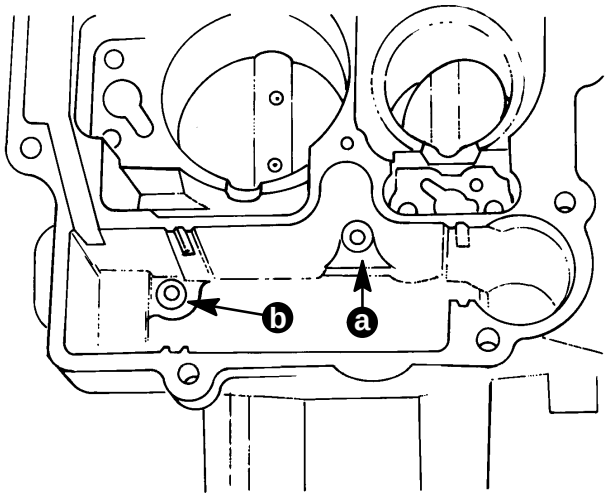
70465

a - Baffle Plate

IMPORTANT: Do not mix up the primary and secondary jets. Make note of the jet sizes and their location before removal to be certain that during reassembly they are installed in the carburetor side from which they were removed.

NOTE:If jets are difficult to remove, place a screwdriver, with the correct width, in the jet slot and lightly tap the end of the screwdriver with a hammer.

29. Remove primary and secondary jets.



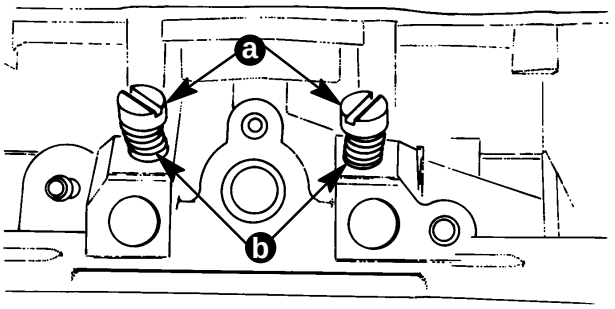
70466

a - Primary Fuel Jet
b - Secondary Fuel Jet

IMPORTANT: Before removing mixture screws, check and note the number of turns from the fully seated position. Also, do not mix up the two screws.

Index

30. Remove mixture screws.



70467

a - Idle Mixture Screw
b - Spring, Idle Mixture Screw

Cleaning and Inspection

⚠CAUTION

Rubber, plastic parts, pump plungers or diaphragms cannot be immersed in carburetor cleaner.

⚠CAUTION

Avoid damage to carburetor. Do not leave carburetor in immersion-type cleaner for more than two hours.

IMPORTANT: Do not immerse metering rod springs in carburetor cleaner; the color, if not "natural" metal, may be removed. Clean separately as needed.

1. Clean metal carburetor parts in a commercial, immersion-type cleaner, until all deposits have been removed. Follow manufacturer's instructions of cleaner being used for proper cleaning and rinsing procedures.

⚠CAUTION

Avoid personal injury. Always wear safety glasses when using compressed air.

2. Blow out passages with compressed air. Do not drill through passages.

IMPORTANT: DO NOT use a wire or drill to clean jets, passages, or tubes in carburetor, as this may enlarge orifices and seriously affect carburetor calibration.

3. Wipe all parts that cannot be cleaned in immersion cleaner with a clean, dry cloth.
4. Carefully inspect all carburetor parts for damage or wear; pay particular attention to the following:
   a. **Idle mixture screws -** Replace if damaged or worn.
   b. **Fuel inlet needle valve and seat -** Replace with new needle and seat if worn or damaged.
   c. **Casting surfaces -** Inspect accelerator pump plunger well for scoring or deposits. Replace worn or corroded components.
   d. **All linkage rods and levers -** Replace if worn or damaged.
   e. **Accelerator pump and plunger parts -** Replace pump and parts if worn or damaged.
   f. **Float assembly and hinge pin -** Float weight of each should be the same. Replace either if fuel can be heard inside when shaken. Check hinge pin and holes for wear. Replace components if worn or defective.
   g. **Throttle valves and shafts -** Check for binding (through entire operating range, making sure valves open and close completely) or for looseness in carburetor body.

IMPORTANT: DO NOT remove throttle valves. If any of the throttle parts or float bowl/carburetor body shaft bores are found to be worn or damaged, carburetor replacement is required.

   h. **Choke valve and shaft/lever assembly -** Check shaft and lever for excessive looseness in air horn. Check choke valve and shaft/lever assembly for binding through entire operating range. Air horn assembly must be replaced if choke valve and shaft/lever are worn.

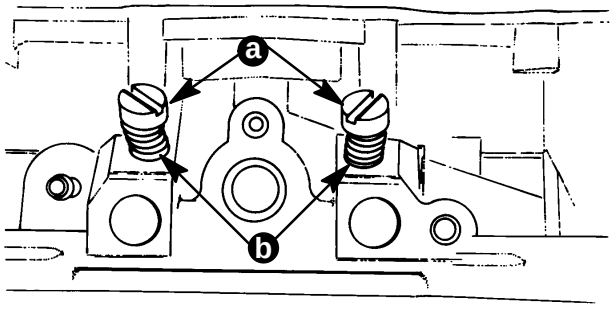
5. Check that choke pull-off diaphragm plunger retracts when vacuum is applied to unit, and that it holds vacuum (plunger remains seated if vacuum is maintained).

Index

Reassembly

1. Install mixture screws (needles) with springs in place. Turn idle mixture screws in (clockwise) until LIGHTLY seated, then back out one and quarter (1-1/4) turns if previous settings were not noted on disassembly.

IMPORTANT: Do not turn idle mixture screws tightly against seat, as damage to seat and/or needle may result.

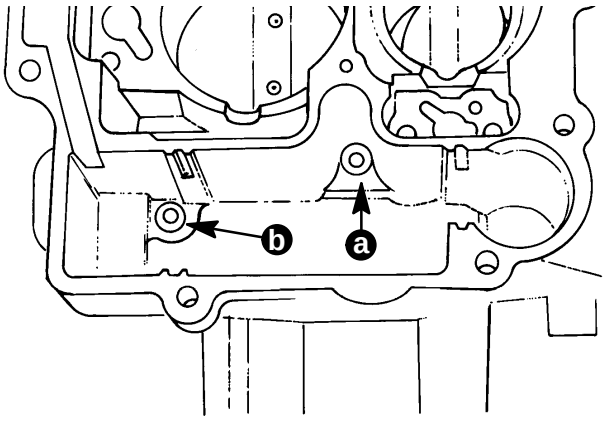


70467

a - Idle Mixture Screw
b - Spring, Idle Mixture Screw

2. Install the primary and secondary jets. Tighten only till snug.

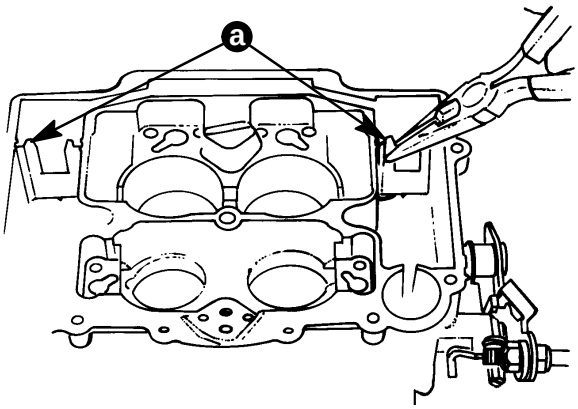
IMPORTANT: Be sure that primary and secondary jets are installed in the appropriate location. Be sure that the size matches the same size recorded during disassembly.



70466

a - Primary Fuel Jet
b - Secondary Fuel Jet

3. Install the float bowl baffle plates, if previously removed.

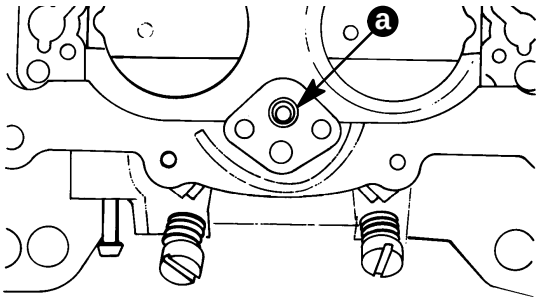


70465

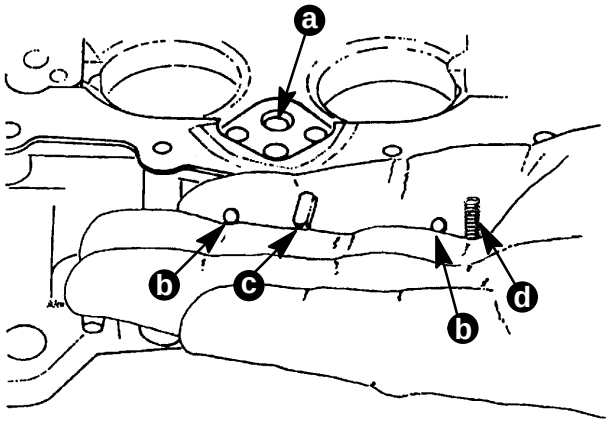
c - Baffle Plate

4. Into bore beneath pump jet housing location, install check-ball and then check-weight or, if so equipped, check-ball and check-spring.

IMPORTANT: If your carburetor had a ball and weight combination, replace with ball and weight. If your carburetor used a ball and spring combination, replace with ball and spring.



70463

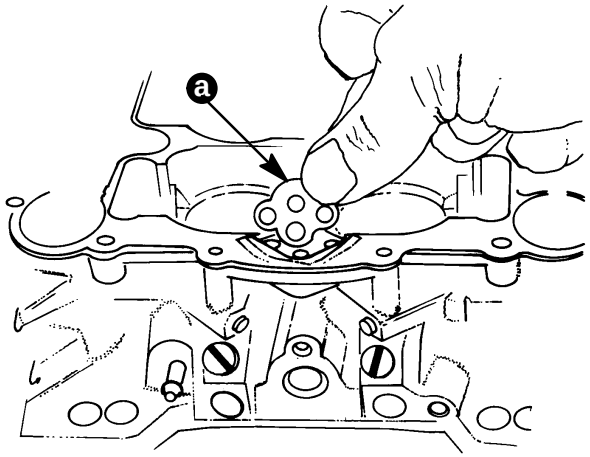


70464

a - Bore
b - Check Ball
c - Check Weight
d - Check Spring

Index

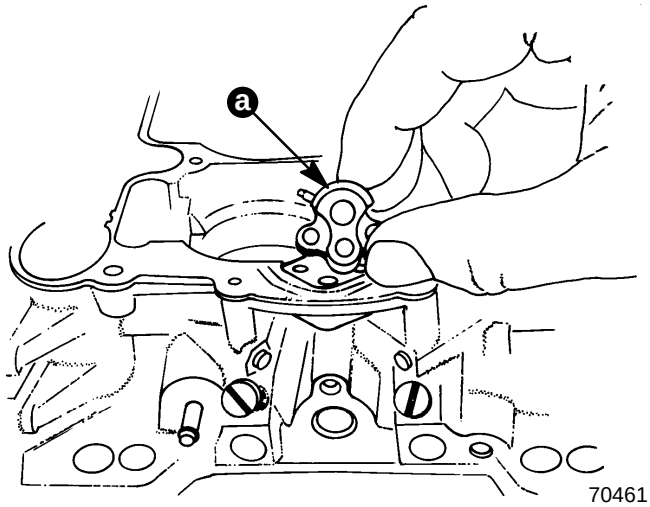
5. Position pump jet housing gasket.



70462

a - Gasket, Pump Jet Housing

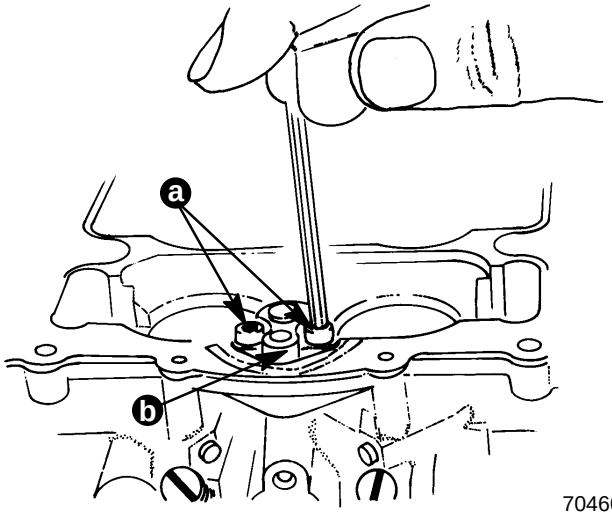
6. Install pump jet housing.



70461

a - Pump Jet Housing

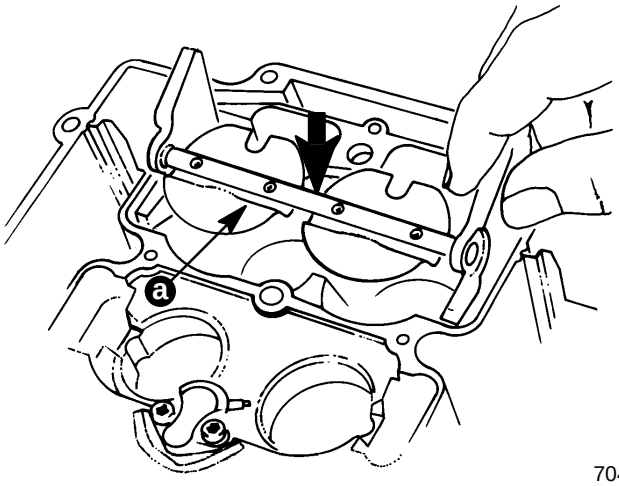
7. Install two screws that secure pump jet housing. Tighten securely.



70460

a - Screws
b - Pump Jet Housing

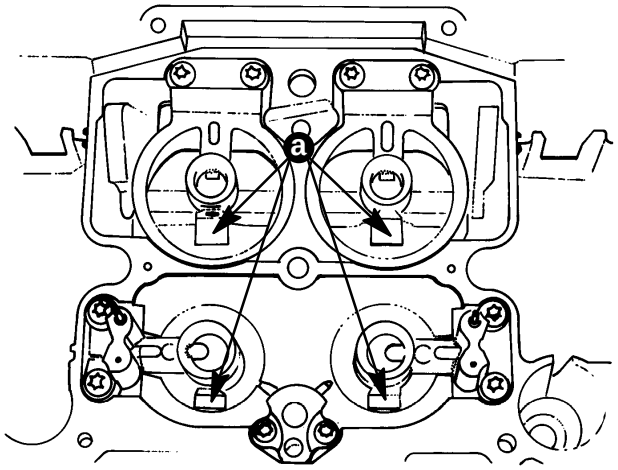
8. Install the secondary air valve and weight assembly.



70459

a - Secondary Air Valve And Weight Assembly

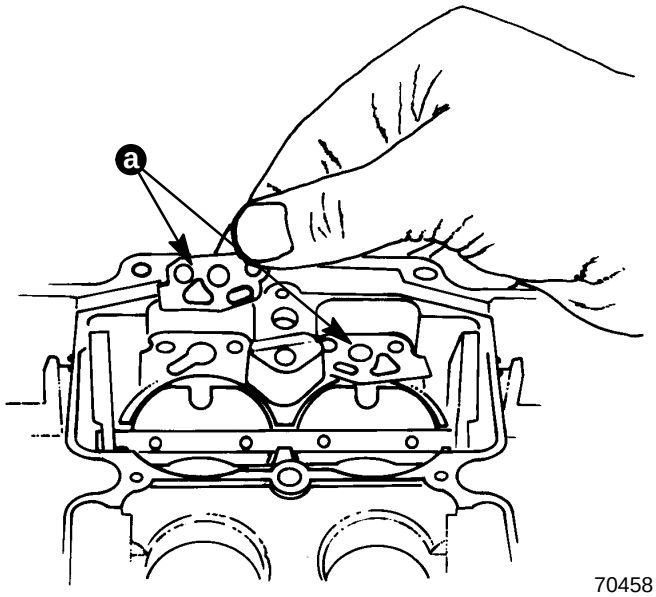
IMPORTANT: Before installing venturi clusters, it is important to note which clusters were equipped with a "distribution tab." This distribution tab arrangement varies from one carburetor to another.



70452

a - Distribution Tab(s) Location And Total Number May Vary

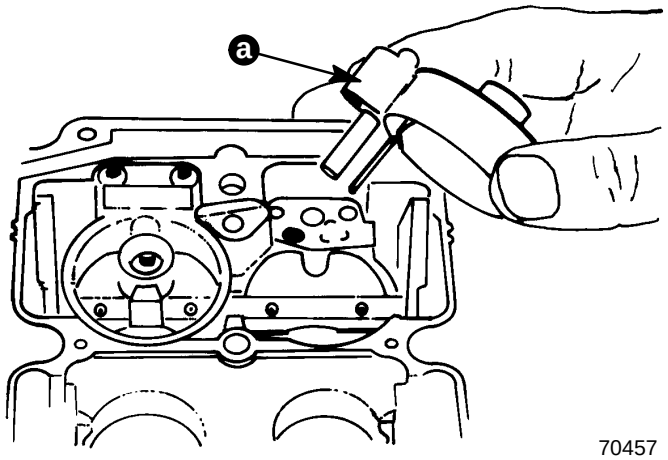
9. Position the secondary venturi cluster gaskets.



70458

a - Gasket, Secondary Venturi Cluster

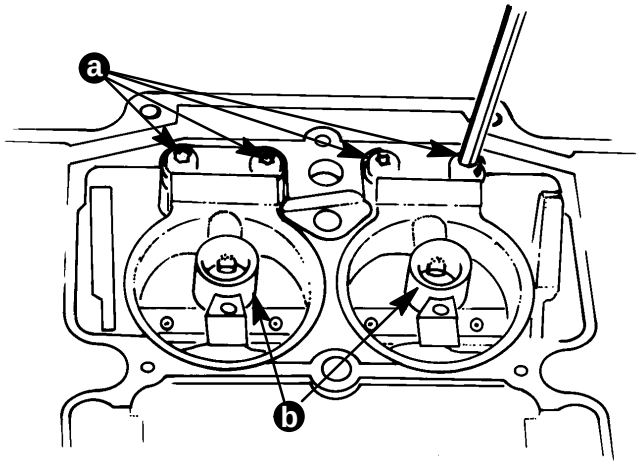
10. Install the secondary venturi clusters.



70457

a - Secondary Venturi Cluster

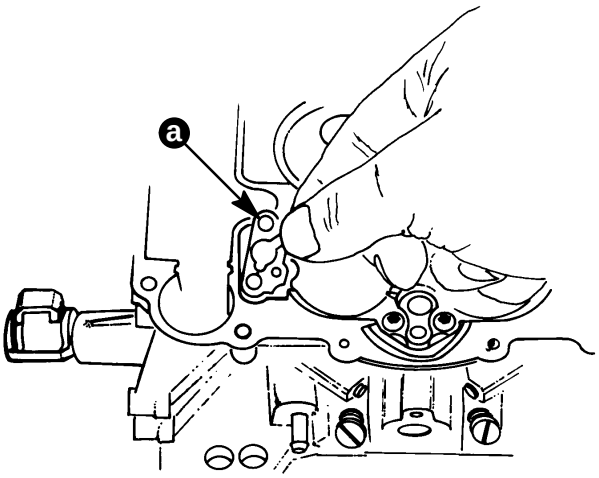
11. Secure each cluster with two screws. Tighten securely.



70456

a - Screws (Two On Each Side)
b - Secondary Venturi Cluster(s)

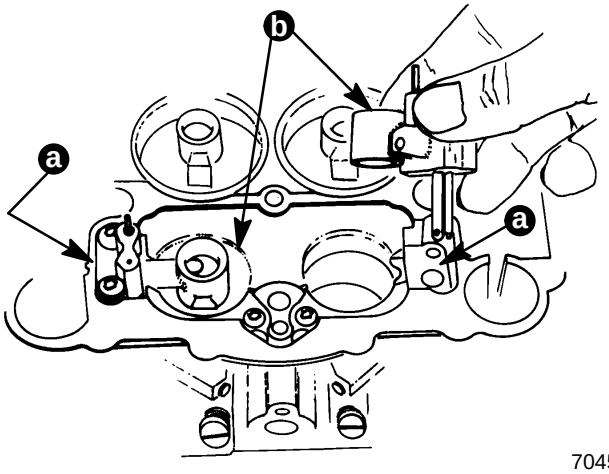
12. Position the primary venturi cluster gaskets.



70455

a - Gasket, Primary Venturi Cluster

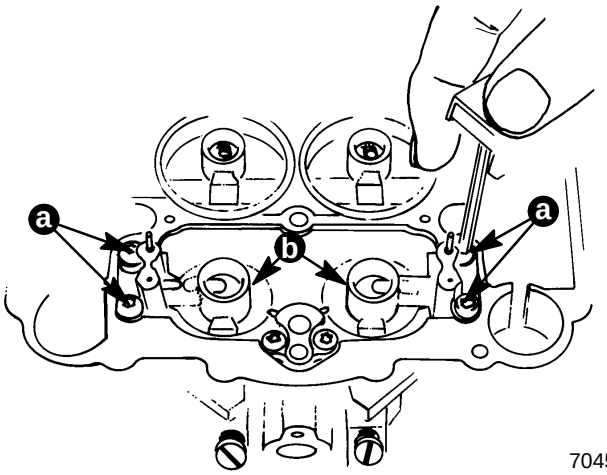
13. Install the primary venturi clusters.



70454

a - Gasket, Primary Venturi Cluster (One Not Visible In This View)
b - Primary Venturi Cluster

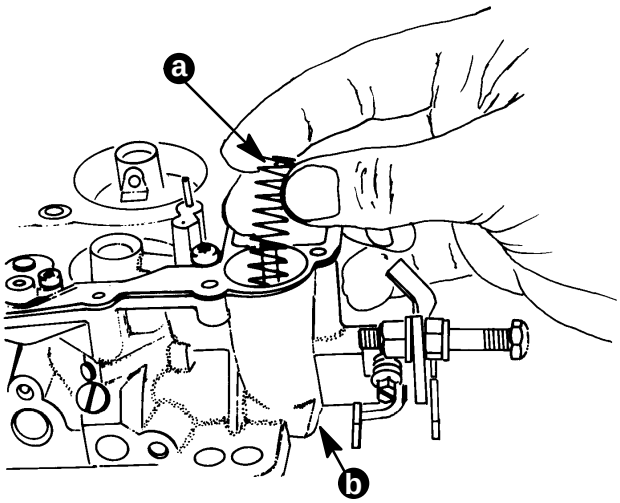
14. Secure each cluster with two screws. Tighten securely.



70453

a - Screws (Two Each Side)
b - Primary Venturi Cluster(s)

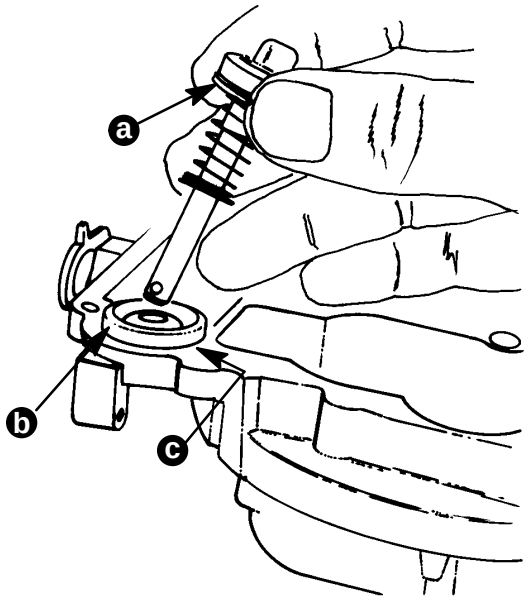
15. Install the accelerator pump spring into bottom half of carburetor.



70451

a - Accelerator Pump Spring
b - Carburetor Bottom

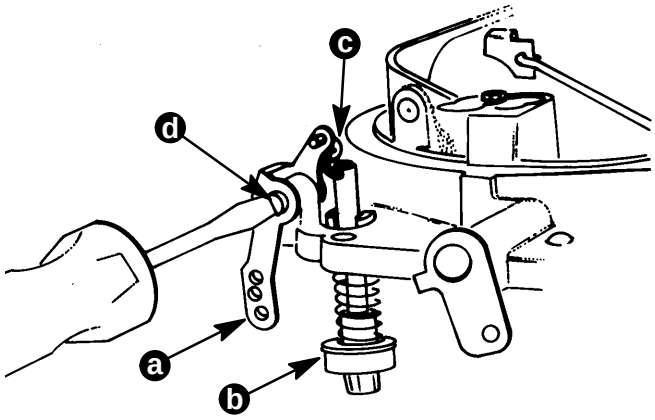
16. Install accelerator pump in top of carburetor housing, after placing washer and guide in position.



70450

a - Accelerator Pump
b - Plunger Guide
c - Plunger Washer (Not Visible In This View)

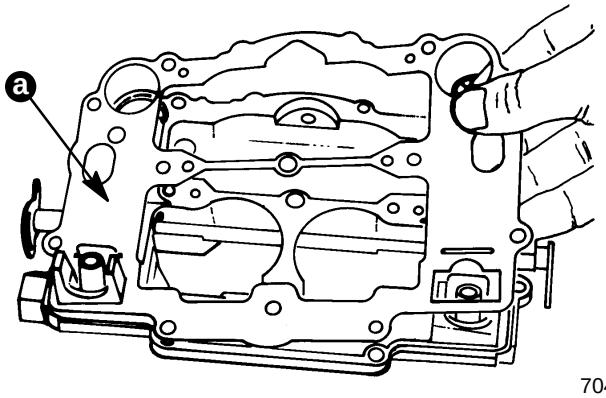
17. Connect accelerator pump lever to pump rod using the S-link. Secure pump lever with pivot screw. Tighten securely. Check to ensure lever actuates the accelerator pump.



70449

a - Accelerator Pump Lever
b - Accelerator Pump
c - S-Link
d - Retainer Screw

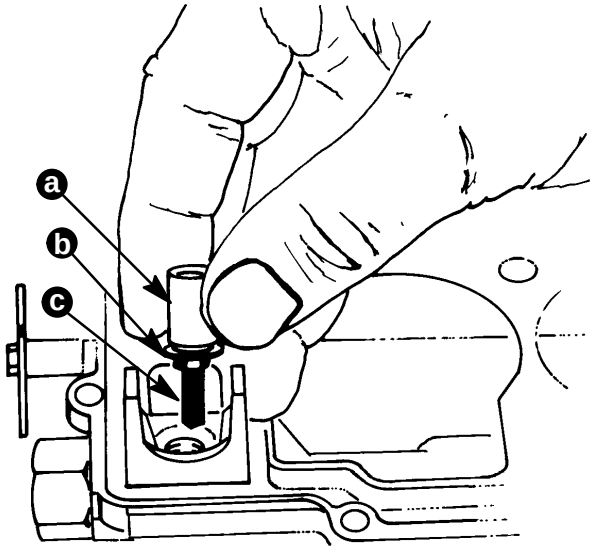
18. Install gasket on top of carburetor.



70448

a - Gasket

19. Install inlet filter in bottom of inlet seat. Install inlet seat with gasket in place. Tighten securely.



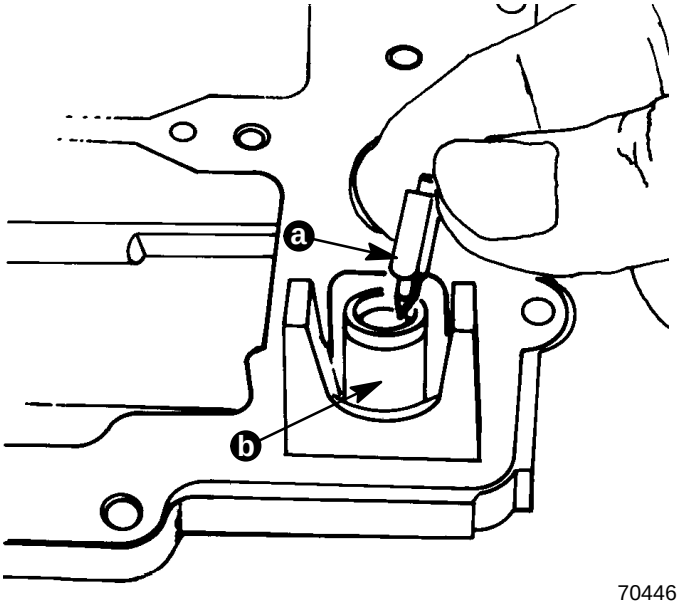
70447

a - Seat
b - Gasket
c - Inlet Filter

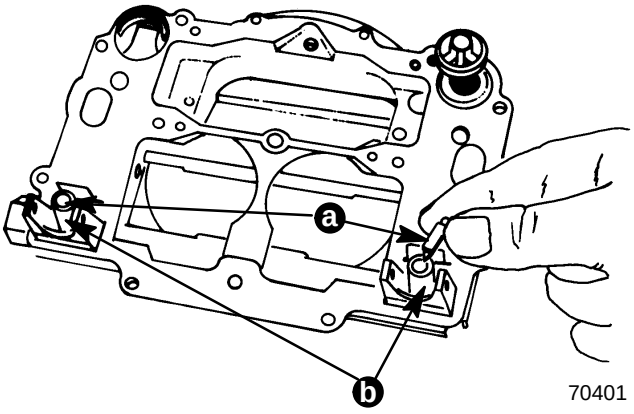
Index

IMPORTANT: If using existing needles and seats, be sure to reinstall them as matched sets, as noted during disassembly.

20. Install appropriate inlet needles into inlet seats.



70446

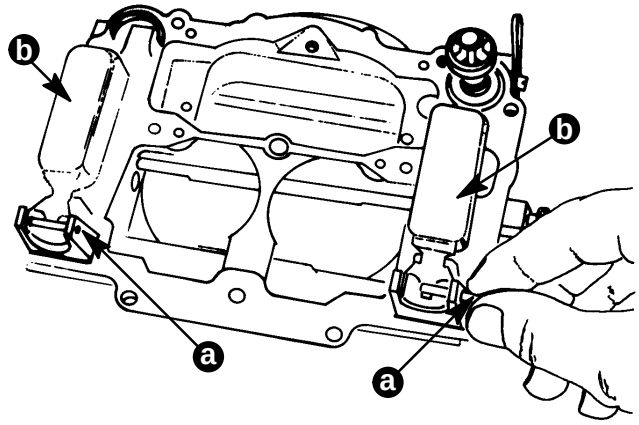


70401

a - Inlet Needle(s)
b - Seat(s)

IMPORTANT: If using existing floats, be sure to re-install them on the same side as removed.

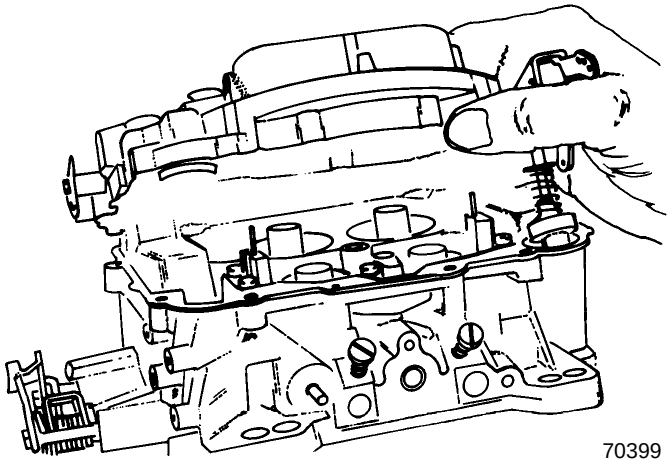
21. Install floats using hinge pins.



70400

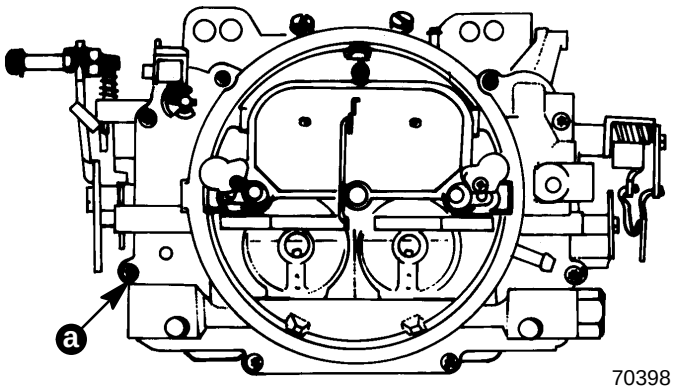
a - Pin(s)
b - Floats(s)

22. Carefully lower top of carburetor onto bottom part.



70399

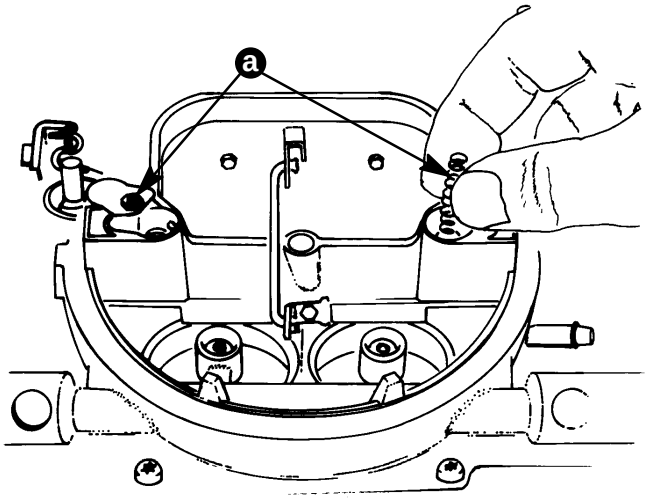
23. Ensure gasket is properly positioned between the two parts and secure the top to bottom with screws (nine total). Tighten securely.



70398

a - Screw(s)

24. Install metering rod springs into each metering rod hole. Be certain to install the appropriate color spring (refer to “Specifications”).

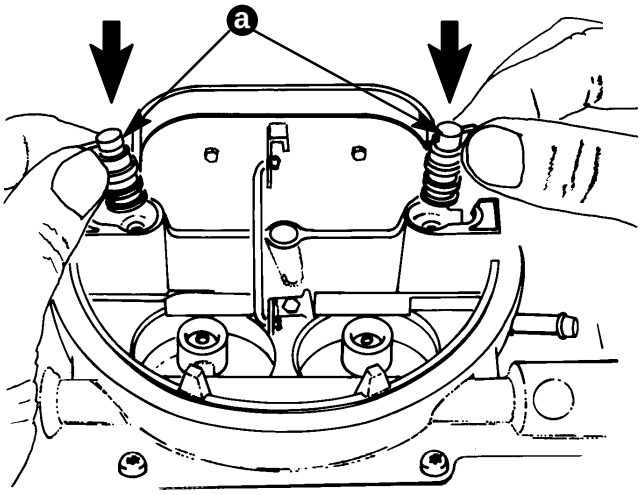


70397

a - Spring(s)

IMPORTANT: If using existing metering rods, be sure that they are reinstalled in the same side from which removed during disassembly.

25. Carefully install metering rod assemblies in the appropriate holes. Push down lightly on metering rods to ensure that plunger will spring up and down.

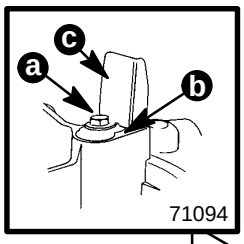


70396

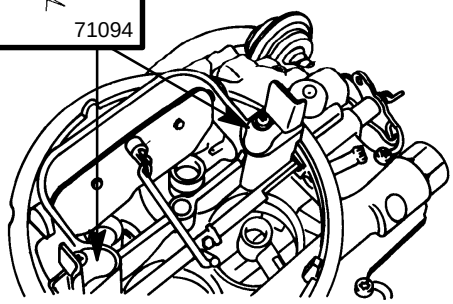
a - Metering Rod Assembly(s)

IMPORTANT: Some carburetors are equipped with air deflectors that are attached to the screw that holds down the metering rod covers. Be sure to reinstall the deflectors if your model carburetor requires them.

26. Position metering rod covers (and air deflectors, if equipped) over metering rods and install screws. Tighten securely.



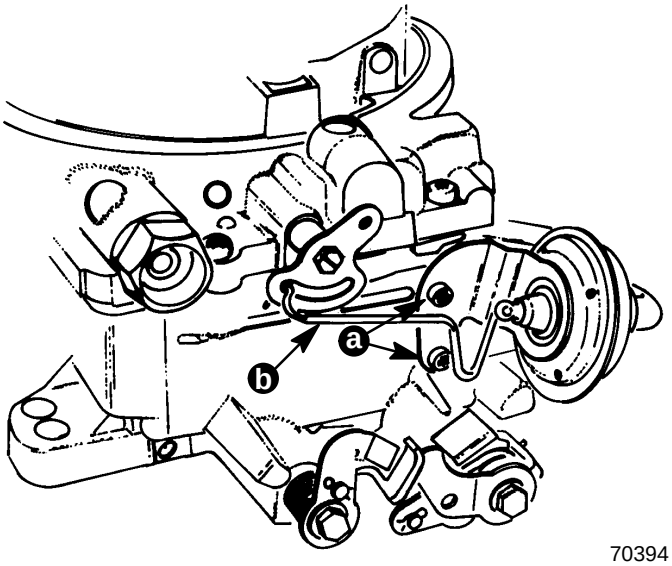
71094



71095

a - Screws
b - Metering Cover(s)
c - Air Deflectors (If Equipped)

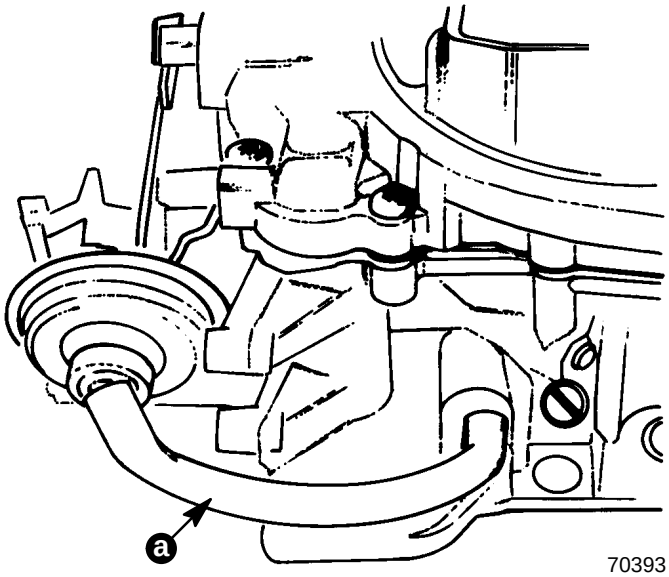
27. Reconnect choke pull-off linkage to carburetor. Reinstall choke pull-off diaphragm. Secure with two screws and tighten securely.



70394

a - Screw(s)
b - linkage Rod

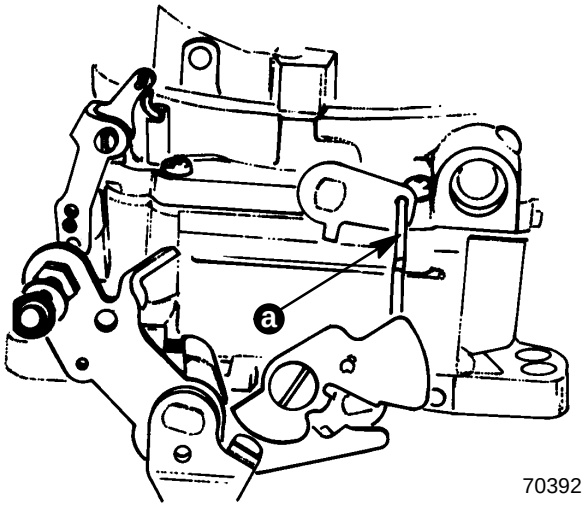
28. Reconnect vacuum hose to choke pull-off diaphragm.



70393

a - Vacuum Hose

29. Reconnect choke plate linkage. Secure with wire clip.



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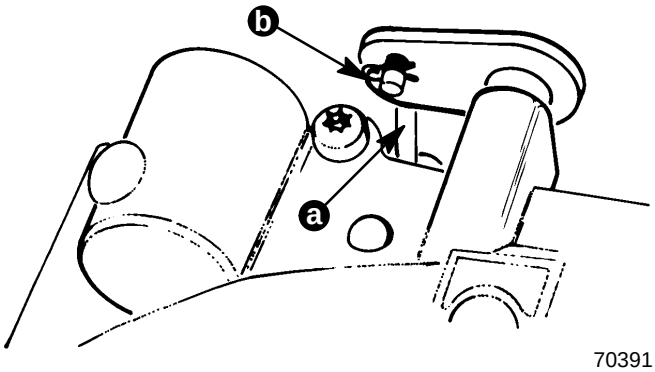

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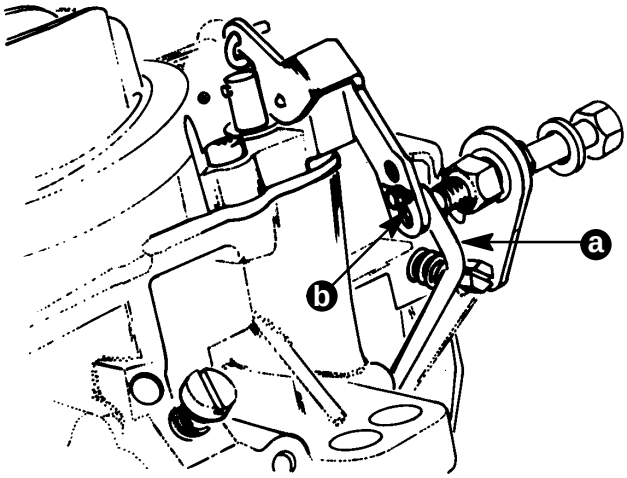
a - Choke Plate Linkage Rod
b - Wire Clip

30. Reconnect accelerator pump linkage rod to hole in accelerator pump lever where originally connected or refer to “Important Service Information” in this section for information regarding adjustment. Accelerator pump linkage adjustment should be checked at this time; refer to Adjustments - “Accelerator Pump” as previously outlined. Secure using wire clip.



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a - Accelerator Pump Linkage Rod
b - Wire Clip

31. Refer to “Installation” and install carburetor.

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